REVENUE REGISTER.

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A MANUAL OF THE CUDDAPAH DISTRICT—II.

WE resume our notice of Mr. Gribble's Manual of the Cuddapah District. Chapter II is divided into two sections—Section A treats of the Geology, and Section B of the Population of the District. The section on Geology was contributed by W. King, Esq., of the Geological Survey. In the beginning of his contribution, Mr. King mentions a curious fact, viz., that the Geological distinction between the rocks of the district stratified and crystalline strangely coincide with its political division into collectorate and sub-collectorate. The chief Geological products of the district appear to be diamonds, iron, lead, and copper, building stones of good quality, road materials, &c. With the exception of the building materials, these resources do not seem to be very valuable. An attempt made in 1868-69 to work for diamonds did not meet with success. The iron ore, though scattered pretty generally over the district, does not occur in any considerable quantity; and the demand for it is but trifling. Lead appears likely to afford a more profitable source of industry. It appears chiefly in the form of Galena, which contains silver. Of copper but a trace is to be found. In the section on Population an interesting account is given of the various castes and their occupations. We learn that of the Chetties 84·4 per cent of the males are employed, a fact which, as Mr. Gribble points out, shows that they must accustom their children early to habits of industry. Of the criminal classes the principal are the Yenadies, the Yerukalas, and the Chenchuwars. Of these tribes the first seem to be but little removed from the beasts of the field in their moral nature. They are perfectly unaware of the value of human life: they would kill a man with as little compunction as they would slaughter a sheep; and to remove a waist-cloth of a nominal value, they would kill its sleeping owner. The Yerukalas do not appear to be of a much pleasanter nature, for though we are told they are not so savage as the Yenadies, they are more determined criminals. It appears that in Mr. Gribble's own experience one of these men came to a village under the pretence of begging, and having ascertained which women wore jewels, and whose husbands were employed in the fields at night, he returned in the night, and snatching up the sleeping women tore away their jewels, wrenching off the lobes of their ears in removing the massive gold ear-rings they wore. In one instance at least this was done with so much violence, that the poor woman's head was seriously injured when

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she fell to the ground on her brutal robber relaxing his hold.

Chapter III is entitled Descriptive Notice of the Taluks. No doubt the information contained in this chapter has been brought together with much trouble and will be useful to some people. As however it would not interest our readers, we will pass on to the second part of the Manual. Here we may mention that though the Manual is divided into parts, the chapters are regularly consecutive, which is a great convenience for the purpose of reference. Chapter IV is divided into three sections, treating of the early history of the district, the district during the last century, and the district under British rule. Of the early history of the district, as is very natural, but little is known, and unfortunately the dearth of authentic information is only supplied by scarcely reliable legends. In the earliest authentic times Cuddapah appears as a portion of the Vijianuggur empire, and an important part too apparently, contributing much wealth to the ruling power. In 1564, when Rama Rajah occupied the throne of Vijianuggur, four Mahomedan powers united to attack the ancient Hindu dynasty: a decisive battle was fought, and Rama Rajah being completely defeated, begged as a favour that he might not survive his defeat. The Mahomedan general, who is said to have been a personal friend, complied with his request, and with his own sword cut off the unfortunate prince's head. After the fall of Vijianuggur, the Zemindars and Poligars who had held their lands on military tenure from the sovereigns of Vijianuggur, assumed each his independence. Those above the ghauts being removed from the tide of Mahomedan conquest then setting southwards, succeeded in retaining possession and held their estates direct from the Hydrabad government. Among the more important of those who asserted their own independence were the Rajahs of Mysore. They not only held their own, but encroached on their neighbours and extended their conquests until 1638, when their day of reckoning arrived, and Dhoola Khan, then in command of the Mahomedan army, laid siege to Seringapatam. He failed in this object, but took Bangalore and Sera, where he founded a provincial government. Second in command on this occasion was Shahjee, father of the renowned Sivajee. Shahjee resided at Bangalore and Kolar, while Sivajee having been left at Poonah, soon distinguished himself in that wonderful career so well known to history. After a time he entered into a league with the Rajah of Golconda; and in fulfilment of his part of the contract, he subdued the various poligars of the Cuddapah and Bellary districts. This does not appear to have been altogether in the interests of the Rajah of Golconda, for in each place Sivajee located a Mahratta Brahmin devoted to his own interests. Some difficulty in ascertaining the exact fate of Cuddapah in the troublous times that succeeded has been occasioned by the misnomer of *Kurpa,* which became substituted for *Cuddapah*, an error which Mr. Gribble informs us still prevails in the English commercial world with reference to the cotton and indigo produced by the district. Mr. Gribble adds, "unfortunately the cotton, as well as the dye, is as often adulterated and corrupt as the name it bears."

In 1757 the Mahrattas overran the Cuddapah District, though they did not establish any permanent kingdom there; and about 1769 Hyder Ali having made peace with the English, with whom he had been at war, commenced operations against the Mahratta power in Cuddapah. At first he did not meet with much success; but on the death of Madoo Rao in the end of 1773

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he renewed his efforts, and after some little time conquered the country. Tippoo Sahib succeeded his father in 1782, and Cuddapah remained in his hands until 1790-91, when the Mahrattas, the Nizam and the English combined against him. The Nizam naturally wished to regain his former possession of Cuddapah, and proceeded to besiege the Fort of Guramkonda. Nothing that the Nizam's force could do had any effect on this almost impregnable fortress; but after the arrival of a detachment of English artillery, Capt. Read took the lower fort; but instead of proceeding to take the upper fort, the main body of the Nizam's army and the English contingent resumed their march, leaving a sufficient force with Hafizjee to capture the upper fort. When Tippoo heard of the capture of Guramkonda, he despatched an army of 12,000 men under his young son Futteh Hyder, assisted by two generals. Hafizjee was taken prisoner and put to death after enduring the most cruel tortures; and the garrison in the upper fort was relieved. So important was the possession of this fort considered, that the Nizam's army and the English contingent, on receiving the news, immediately marched back, retook the lower fort, and continued the siege of the upper fort which, however, resisted all their efforts until it was ceded to the Nizam by Tippoo in 1792. Eventually, in 1799, Cuddapah was transferred to the English by the Nizam for the arrears of pay due to the English contingent. Mr. Gribble so well summarises the previous history of Cuddapah, that we must be excused for reproducing it in his own language. "For the last 500 years it had been a debateable land. Situated on the borders of several powerful kingdoms, the vassal of one yesterday, of another to-day, and of a third to-morrow, its lines can scarcely be said to have fallen in pleasant places. It is true that since the British have ruled the district there is but little of history to be gathered from the 70 years of possession, but this absence of materials for history is owing to the monotony of peace and the quiet it has enjoyed. There is so little to tell of the previous centuries of native rule, because whatever materials may have existed, have been destroyed in the succeeding scenes of robbery, murder, war and treachery."

Mr. Gribble's picture of Cuddapah under British rule opens with a fine notice of Sir Thomas Munro: we extract a portion of it for the benefit of our readers.

"The Government of Madras, however, were fortunate enough to possess an officer who was able to institute order and good government in the place of anarchy and robbery.

This man was Major Thomas Munro, afterwards Sir Thomas Munro, Governor of Madras. Munro was then 39, and had been for eight years employed in the Revenue Department. He had been appointed, in the first instance by Colonel Read, the Collector of Salem and Baramahal. This appointment of a military man to revenue duties created intense dissatisfaction amongst the Civil Servants of Madras, and it was many years before Munro was able to live down the opposition, (if not hatred), which he met with during a great part of his official career. In 1798 he had been appointed Collector of Canara, and now, after a little more than 18 months' service in that appointment, was transferred as Principal Collector of the Ceded Districts. There is scarcely a taluk in the districts of Salem, Cuddapah, and Bellary where some trace or some legend of "Munro doraigaru" is not to be found. Here it is a bungalow, there a raised camping-ground, and in a third place a tope; but wherever and whatever it may be, it is regarded by the natives as a sacred spot, and is invariably pointed out to the European visitor as the place where the Colonel Sahib passed a few days.* But whatever recollections Sir Thomas Munro may have left behind in other parts of the country, he has left his mark in a peculiar manner upon the Ceded Districts—Cuddapah, Bellary, and a portion of Kurnool. Almost every institution at present existing was inaugurated by him; at one and the same time he started and kept in working order a new establishment of revenue servants, a new system of revenue settlement, a new survey, a new department of public works, and a new police. Besides this

* *Vide* Chapter on "Popular Superstitions."

he was Commissary-General for the Army of the Commander-in-Chief, which was in the Ceded Districts a year after he joined, and he insured so constant a supply of all that was required, that he received the Lieutenant-General's thanks for his cordial co-operation. And yet, in spite of all this multifarious work, he was never at a standstill. He was always ready to meet every emergency, whether it was suddenly to remit three lakhs of pagodas, or in two months' time to furnish 250 garce of grain. It was in these districts that, after he had resigned his civil appointment, he was, as General Munro, in command of an expedition against the Mahrattas, and last of all it was in the Ceded Districts that Sir Thomas Munro, Governor of Madras, made the tour during which he died. He died as he had lived—in harness—and a letter written from Cuddapah, only a short time before he was carried to his lonely grave in Gooty, speaks of the pleasure he felt in being back amongst the people for whose welfare he had for so many years worked.

Two traditions of Munro—one narrated by Gleig, and the other familiar in this district—may not be out of place.

In 1807, the last year of his collectorate, during the settlement of a boundary dispute between Bellary and Mysore, a native assaulted another. The man assaulted at once exclaimed, "I shall go to Anatapoor" (Colonel Munro's head-quarters) "and complain to the *father*." From his public despatches we find Munro continually fighting against 'turbulent poligars' or corrupt officials, but what better proof could there be of the tenderness and justice with which he governed the people generally.

A short time before his death, whilst on his way to Bellary, Sir Thomas travelled through the district of Cuddapah. He passed from the upper table-land of the sub-division to the valley below the ghauts by means of the narrow gorge where the Papagny breaks through the hills. Whilst riding, he suddenly looked up at the steep cliffs above, and remarked to the natives riding behind him, "What a beautiful garland of flowers they have stretched across the valley." They all looked, but said they could see nothing: "Why, there it is! all made of gold!" Again they looked, but saw nothing. Sir Thomas made no further remark, but one of his old native servants quietly observed "alas! a great and good man will soon die!" A few days afterwards, and Sir Thomas Munro had passed away.

But to return to the work that Munro accomplished when first he joined his appointment. His task was no easy one. He was appointed Principal Collector of the Ceded Districts on 1st November 1800, and was placed in direct communication with the Governor instead of the Revenue Board, until such time as the country should be brought to order. Four subordinate Collectors were placed under him, stationed at Harpunhully, Cuddapah, Adoni, and Cumbum. The arrival of Munro was the signal for every petty poligar to resist the Company's authority. Fortunately for the new Collector, the wars which had occupied the last two decades of the eighteenth century had reduced most of them in power. But, though impoverished and reduced, they had, during the last 50 years, seen so many successive governments that it can be understood they did not expect the British rule would be a permanent one. They, therefore, endeavored as much as possible to evade its demands. When strong enough, they resisted them and kept the Ameens* in confinement, and when too weak to do this, they absconded without paying their rent, and fled from one friendly chief to another in the hopes of being able to raise adherents, or of being able to hold on until the rising of some other power would enable them to shake off the British yoke. From the very first moment of his arrival Munro recognized the necessity of crushing the power of the poligars for ever. Immediately after his arrival we find him writing:

"Before we can draw our revenue undisturbed from willing subjects we shall have to remove many powerful and turbulent poligars, and many petty ones of modern origin, who have taken advantage of the troubles of the times in order to withhold their rents for a few years, and then to declare themselves independent. The reduction of these vagabonds, who are a kind of privileged highwaymen, will render us much more able to resist our external enemies."

So quickly and so effectually did Munro do his work, that in March he was able to settle the revenues of Gurrumkonda district, and in April the whole division was placed under the direct management of the Board of Revenue. One difficulty he had to overcome was the presence of bodies of the Nizam's troops who refused to leave the country until their arrears of pay were settled. This Munro did at once, leaving the money to be recovered hereafter. The poligars moreover were kept in check by a proclamation declaring that every chieftain who garrisoned a fort, maintained an armed force, or levied contributions, would be treated as a rebel. This was not a mere empty threat, for in May 1801, General Campbell marched against Vemlah, in the Pulivendla Taluk, and reduced the poligar to obedience by battering his fort about his ears. Munro's summary manner of treating these petty chieftains did not meet with universal approval. The Governments of Madras and Calcutta gave it their

* Subordinate Revenue Officials.

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sanction, but the Court of Directors condemned it in the strongest language as "not only disingenuous, but harsh and ill-considered," and called upon Munro for a complete explanation of his motives, threatening that, if this proved unsatisfactory, he would be removed from his appointment and never again employed on revenue work "for which the violent and mistaken principles of his conduct seemed to render him unfit." The Directors wished the poligars to be upheld in their right and enjoyment of the soil, and trusted that a gradual course of good government would wean them from "their feudal habits and principles," (rather a mild term by the way for robbery, murder, and rebellion) and turn them into peaceful citizens. Strange to say there is no explanation of Munro's to be found on record, and there is no other proceedings of the Directors approving of his settlement. After having given full vent to their humane feelings, the Board of Directors seem to have quietly pocketed the increased revenues, which were the result of Munro's "disingenuous and ill-considered policy," and to have made up their minds to say nothing more about it. In the meantime Munro pursued his old line of conduct. He steadily followed each delinquent; and, though at times when the forces under his orders were employed on their duty, he was compelled to remain quiet (for he made a point of never using force until he knew that he had sufficient troops to render resistance unavailing), he always carried his purpose in the end. For months perhaps the fugitive poligar would be going from one friendly chief to another, endeavoring to incite each into rebellion, and at the commencement of Munro's rule these men perhaps laughed at the ineffectual manner in which the Company's Collector carried his orders into force; but Munro never moved from the line he had adopted. He had at first only a limited number of troops at his disposal. He employed them, as occasion happened, in hunting out or reducing the forts of the absconding poligars, but he never allowed them to be diverted from the object they had in view. Other poligars might disobey his orders, might abscond or attempt to raise rebellion; for the present Munro was hunting out the Poligar of Nossum (or whatever the poligar might be), and until that was done, he said nothing. Frequently a passage like the following occurs in Munro's despatches: "I was not prepared at the time to enforce any demand by force, and I therefore took no notice of his conduct." But when the time came that Munro was able to enforce his demand, the recusant poligar was hunted from place to place. He was allowed no rest. If he took refuge with a chief beyond Munro's jurisdiction, no force was used. Munro quietly looks on and remarks to the Board that, since for each protection the poligar's friendly ally will squeeze as much money from the fugitive as he can, the poligar will, after a few more such visits, be left without any more resources, and as none of his friends will dream of protecting him when he has no more money, he will then be compelled to surrender to the troops who, for days and weeks, have been following and waiting for him as patiently as a cat for a mouse. The whole of the first eighteen months of Munro's rule was taken up by these incidents. One is almost a *fac simile* of the other; the beginning and the end are always the same. The poligar begins by refusing payment, he becomes refractory or absconds, and he ends by being captured, his estate is confiscated, and he is confined in the fort of Gooty. As an example I quote one of Munro's despatches, because it is one of the shortest, and because it shows as clearly as any other the principle he acted upon (letter to Board, 25th November 1801):—

'The Poligar of Oopaloor, about 80 miles to the west of Cuddapah, disobeyed the summons I sent him in February last to meet me in order to settle his rents, and he also refused to relinquish to the Sircar villages which he had obtained on rent a few years ago from one of the Nizam's Amildars. I was not prepared at the time to enforce my demands, so I took no notice of his conduct until the division under Major-General Campbell encamped in this neighbourhood in June, when I directed the Amildar* to take possession of the Sircar villages which were given up without opposition. The poligar was permitted to keep his hereditary village of Oopaloor on the idea that he would in future show more obedience to the civil authority. On my arrival here on the 20th instant, I found that he would neither come to the cutcherry himself nor allow the Curnam of his village to bring me his accounts. All the Poligars of Gurramkonda had come in with their accounts, and as I was sensible that their example being followed by those in other parts of the country, would depend in a great measure on his treatment, I resolved to seize him without delay. As he had only 20 armed followers, the Amildar's peons would have been sufficient for the purpose, but as there was a chance of his escaping and collecting more followers, and committing depredations before he could be taken, I requested Colonel St. Leger, commanding at Camelapoor, to send a detachment against him. The Colonel in consequence marched himself last night with these troops, and surprised and made him prisoner without any loss. I shall keep him in confinement in Gooty, and allow him such a proportion of his revenues as the Right Honorable the Governor in Council may be pleased to direct.' "

* Amildar is still the term in ordinary use for a Tahsildar.

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After the days of Munro some petty troubles occurred from time to time, in one of which an unfortunate Collector named Macdonald was barbarously murdered in the endeavour to protect a Missionary who had implored his help; and in 1846 Narasimha Reddy, a descendant of the Jaghiredar of Nossum, stirred up a small rebellion, which it required the interference of the military to entirely subdue. With this the political history of Cuddapah closes, the succeeding chapter being devoted to the Revenue History of the District.

CORRESPONDENCE.

LONDON LIFE.

[From our Special Correspondent.]

Sir,

I mentioned in my last instalment of "gup" that Queen Victoria had once more emerged from her prolonged seclusion and opened the Parliamentary Session in person. With the cheers which greeted her on that occasion still ringing in her ears, she made a second effort in the public interest on February 25th, and was present at a grand concert given at the Albert Hall. Again was she received with enthusiasm; and on Tuesday last she proceeded in state from Buckingham Palace to Whitechapel to open a new wing of the London Hospital. Then the world had substantial proof that the Queen is truly enthroned in the hearts of her people; never before had she received a more gratifying and more sincere ovation. All along the line of route, in the aristocratic purlieus of St. James's, on the crowded Thames embankment, in the busy thoroughfares of the city, in the crowded environs of the Stock Exchange, and in the densely-thronged neighbourhood of the Hospital, the display of loyalty was lavish and unanimous. Banners, flowers and draperies decorated the streets, but the greatest attraction and the greatest ornament of the route were the smiles and happy faces of a contented populace. In no metropolis in Europe could such a sight be witnessed save in our own. We have Whigs and Tories, and Radicals, and grumblers and pessimists, and perhaps a few half-hearted Fenians, but all unite in respecting the monarchy and venerating the piety and virtue of its distinguished embodiment. The more than gratification—the pleased emotion with which Her Majesty acknowledged the salutations of her lieges—was patent to the most unobservant eye. It really seems a pity that having inaugurated the season so auspiciously, she should be obliged to proceed to Germany so speedily; however, she will again be in England in time to participate in the festivities which will celebrate the safe return of the Heir-apparent. It is a curious and perhaps not altogether happy coincidence that no member of the Royal family will be in the United Kingdom at the beginning of April. With the Queen and Princess Beatrice at Rosenheim, the Prince of Wales at Malta, the Princess at Paris *en route* to meet her husband, the Duke and Duchess of Edinburgh at St. Petersburg, Prince Arthur at Gibraltar, and Prince Leopold in the south of France, we shall be left alone in our plebeian glory. But the return of the Prince will be hailed with all the more satisfaction. He has already been absent five months; it will be quite six before he is again in London, and, although the time has slipped away very rapidly, his prolonged visit to the East has caused a very sensible blank in society. The affability, geniality, cheeriness and good humour which have won for him such golden opinions throughout India, are not less appreciated in the United Kingdom. After the gorgeous processions, the magnificent ceremonies, the grand scenery and the varied wealth of Hindustan, this little island may appear tame and dull; but home is home, as many of your readers can heartily testify, and we flatter ourselves in England that our future King will be as pleased to gaze upon his subjects once more as they will be to welcome him after his adventurous travels.

We have almost ceased to take any interest in Turkey; the victimised bondholders see their chances of redress daily dwindling, and are resigned to the inevitable. Not so, however, is it with Egypt. We have got our fingers well into that pie and mean to keep them there, if perchance we may rescue some plums for ourselves. At the present time the financial (I do not say political) embarrassment of the Khedive equals that of the Sultan, but whereas the latter is an effete lunatic surrounded by a corrupt court and an unscrupulous council, the former is an energetic and self-reliant ruler, who will be obeyed and who is endowed with qualities which pertain to the European rather than the oriental character. This makes a vast difference, in fact the difference between certain bankruptcy and probable solvency. Turkey unblushingly repudiates her obligations, but does not attempt to reform her exchequer. The motto of successive Grand Viziers,—and Heaven knows they are changed often enough—would appear to be "Let us eat and drink, for to-morrow we die." They count upon it that Allah will permit the

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existing luxury, corruption and *dolce-far-niente* to last their time, and what matters anything beyond the immediate future to the rulers of a land where selfishness reigns supreme and where patriotism is unknown? Egypt is governed by a powerful will, and when Ismail Pacha says that the revenue and expenditure of his kingdom must be revised, we may feel sure that some steps will be taken in the matter. His promises are not the delusive pie-crusts so often furnished by the political bakers at Constantinople. Great schemes of financial reform have been discussed at Cairo during the last month, and numerous have been the advisers who, for the most part, were considering their own aggrandizement quite as much as the welfare of the State they would fain rescue from collapse. Italy, France and England have each sent more than one representative, and very complicated intrigues have been afloat in order to minimise English influence in Egypt. Ever since we bought those unlucky canal shares, all our actions have been viewed with a jaundiced eye, and foreign nations, France especially, cannot realise the fact that we would sooner appropriate an entire herd of white elephants than annex any portion of the Khedive's dominions, for we should not know what to do with our spoil when we had got it. I had expected to be able to give you the result of Mr. Cave's mission to Cairo, but I am disappointed, for, although that gentleman has returned to London, his report has not been made public, and we are in profound ignorance as to all he thought, did, or recommended during his sojourn on the banks of the Nile. Of course, rumours of what occurred are as plentiful as diversified, but it is useless to attempt a recapitulation of them. The Special Correspondent of the *Daily Telegraph* alone has contributed about a dozen columns weekly on the subject, and professes to be the *ami intime* of the vice-regal household, and to know "all about" it; but, unluckily for the gentleman who fills the important post of Special Correspondent at Cairo, we are continually haunted by recollections of the irreclaimable savage in Khiva and the renowned "man-and-dog-fight" in the midland counties, which redounded more to the credit of their graphic delineation and imagination than to his stern regard for facts. Whatever may be the final upshot of the various financial combinations which have been fluctuating during the last few weeks between Cairo, Paris, London, Vienna and Turin, it may be prognosticated with tolerable safety that the resources of Egypt will prove to be substantially sound and re-assuringly elastic, that the Khedive and his advisers, so far as he consents to allow them a voice in the matter, will make honest efforts to consolidate the floating debt and provide for the punctual payment of interest on existing loans, and that the *scare* which has frightened investors and encouraged speculators in Egyptian Bonds will soon pass away. Great blame has attached to the Khedive for what has been most unfairly styled his invasion of Abyssinia. Now, in commenting on this matter, I may without egotism claim to be no *sutor ultra crepidam*. When the British Government entrusted to Sir Robert Napier a force (quorum pars *minima* fui) to subjugate the truculent Theodore, I spent ten months in the country, and had ample opportunities of studying the manners and customs of its inhabitants. To repeat a hackneyed phrase, I can conscientiously affirm that "their customs are atrocious, and manners they have none." Because they style themselves Christians, a spurious sympathy has been excited on their behalf, but uninformed philanthropists ought to be told that Abyssinian Christianity is the embodiment of Old Testament morality, and is quite a stranger to the Gospel dispensation. The Christian subjects of the late Theodore and the present Kassai, indulge in polygamy, and make beasts of burden of their wives and other female relations. They are people who would always be ready, and willing to "hew Agag in pieces." Theodore himself was a reproduction of King David in his most vicious and unrepentant years. Inebriety and adultery, idleness and ambition, are the pleasant, and ever present, vices of the Abyssinian nation. Far be it from me to suggest that the professing Christians in this or any other European State are immaculate; but when the virtues of Abyssinian *soi-disant* Christians are flaunted before our eyes to the disparagement of their Mahommedan neighbours, I loudly protest that the balance of equity, right feeling and cleanly living is very much in favour of the Moslem. There can be no doubt that King Kassai provoked the attack which the Khedive has been compelled to institute. In May 1868, at the close of the British Campaign, I addressed the following lines to an English newspaper: "Undoubtedly "authentic news reaches me that extensive pre-"sents are about to be offered to King Kassai. "A battery of field guns has been sent for "from Bombay, and these as well as fifteen "hundred Enfield rifles, with a proportionate "quantity of ammunition, are destined for the "Tigre monarch. Am I singular in my idea "that if this prince is powerless to check the "peccadilloes of his disagreeable subjects, "always on the *qui vive* to plunder his nearest "allies, he is hardly to be trusted with the "formidable weapons which we propose to "place in his hands."

I venture to say that my conjectures have turned out correct; his marauding subjects, having been relieved of their great bug-bear Theodore, proceeded to harry their neighbours. Aided by the unusually powerful artillery which we had inconsiderately left behind us, they

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found victory so certain, that Kassai soon began to fancy himself a second Napoleon Buonaparte. Theodore was not half so rapacious; *l'appetit vient en mangeant*, and Kassai finding he had no more "worlds to conquer" in the immediate vicinity of his kingdom, turned his attention to Egyptian territory. The same system of plunder and extortion which had proved so "toothsome" and so successful in Tigre was extended, and the subjects of the Khedive began to fall victims to the rage for rapine and conquest. Kassai was the invader and not Ismail Pacha, but because the former astutely dubs himself a Christian, the "*unco guid*" in this and other countries think that such a king "can do no wrong." Whatever his pecuniary embarrassments may be, no true friend can seriously advise the Khedive to recall his troops from Massowah, *re infectâ*. Such a course would be simply inviting fresh disasters and increased outlay in the future, combined with immediate humiliation. The rainy season is now so fast approaching, that the Egyptian army may not be able to overthrow their opponents this spring; but they must succeed in the autumn. Meanwhile it is annoying to recollect that we were the "first cause" of King Kassai's high-handed and oppressive conduct.

The late elections to the Representative Assembly in France have been decidedly disappointing, and in the estimation of some people not a little alarming. The Napoleonists, Orleanists and Legitimists have been discarded in every direction. The Republicans, to use a sporting metaphor, have "walked over." Not however because the universal tendency of the country is towards republicanism, but because the respectable middle and upper classes have in a great measure refrained from recording their votes at all; in fact, that section of society which the Right Honorable John Bright has designated as the "residuum" have had the field to themselves. This is unfortunate and not altogether easy of explanation. The solution of the puzzle may be somewhat as follows: The Orleanists and Legitimists hate each other most cordially, and have no greater liking for the Napoleonic Dynasty. They will not vote for either of the Royal families, nor will they support the Imperial party, and they are individually too weak to do any thing for themselves by themselves. The Imperialists are biding their time; they do not feel themselves as yet prepared to strike any decisive blow; and moreover, they are unwilling to cause Marshal McMahon any offence by disturbing the Septennate and thus curtailing his lease of power. So, for the moment, the Republicans appear victorious, but it will be a hollow and short-lived triumph, for, so long as the President keeps the army in hand, no number of Republican deputies will succeed in revolutionising the policy of the State.

Unless I am greatly mistaken, a most deceptive calm reigns in Europe, and a little bird, for whose acumen and discernment I have the highest respect, and whose nest is ensconced in a snug corner not far removed from the most influential diplomatic circles, whispers to me that, ere the summer passes, we shall witness strange convulsions on the continent. The months of May and June are frequently prolific of wars and rumours of wars, and those periods of 1876 are likely to prove no exception to the rule. Last summer hostilities were on the point of commencing, when Russia interfered because Austria was not ready, and Prussia could not be permitted to suck the orange dry without others sharing in the fruit. Now I fancy matters have been satisfactorily arranged, and unless France, Belgium, and Holland are considerably stronger and better prepared for the struggle than the world in general has any idea of, the three great military powers are likely to play old gooseberry with the map of Europe, and infinitely disturb the mind of School-board teachers whether certificated or uncertificated. And what rôle are we to play in this great military and nautical drama? Are we to rush on the scene and take a leading part, or are we to play prompters at the wings, or are we to occupy a private box behind the "silver streak," and contemplate the performance with cynical indifference? Time alone will show.

One little compartment of the map of Europe is at last developing more encouraging symptoms. Spain, for the first time for nearly eight years, has rid herself of anarchy and revolution. The obstinate, possibly chivalrous, but altogether misguided Don Carlos, has tardily recognised the hopeless aspect of his cause, and has thrown up the sponge. He retreated into France last week and arrived in England, the invariable refuge for all political scamps, on Saturday night. It is hardly probable that the Spanish bond-holders, (who have been deprived of their interest mainly through the wild machinations of the Pretender), should have assembled at Charing Cross and Folkestone to receive him, nor is it likely that the general public take much interest in his proceedings or even in his existence; but still it is a fact that a considerable crowd assembled to witness his arrival, and their greetings were far from cordial; the hisses of the malcontents entirely drowned the feeble "vivas" of his compatriots and partisans. Such an expression of feeling was undignified and unnecessary, but it was a kind of protest against the useless bloodshed and widespread suffering of which Don Carlos had been the instigator and mainspring. Let us hope we shall hear no more of him, at any rate in connection with his afflicted country, and we must look forward to a "good time coming" when the Dons will recover their self-

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respect, and discard their self-love, when a "pronunciamiento" will not be a daily occurrence, and when Spanish "threes" will be quoted in the same list with consols.

Parliament has not been very busy as yet, and no home-politics of stirring interest have come to the front. The army and navy estimates have been submitted to Her Majesty's "faithful Commons," but they are modelled on the old lines, and we trust to Providence to protect our shores and dependencies as of yore. Lord Cardwell and Mr. Goschen said we did not want an army or a navy, and Mr. Hardy and Mr. Ward Hunt, their successors, endorse their policy, bold, truculent, and animadversive as they always were when in opposition. The officers of both services are still in a chronic state of discontent. Their grievances are confessedly based on solid grounds, and Royal Commissions have been sitting for months, nay years, to devise a remedy for the stagnation of promotion and similar hardships; but, as these Commissions studiously abstain from framing and presenting any practical reports, the value of their existence is, to say the least, doubtful; indeed, a Royal Commission is rapidly becoming synonymous with a myth. Mr. Osborne Morgan, the untiring Welsh Dissenter, has again introduced his bill for opening Church of England burial-grounds for the reception of Jews, Turks, infidels, heretics, and schismatics, and has again been defeated, but not signally. He knows the value and significance of the saying *gutta cavat lapidem non vi sed scæpe cadendo*, and if he returns to the charge again and again he will carry his point. Unwilling as we are to face the fact, the English Church establishment is doomed. Its abolition is the inevitable corollary of the Irish Act of 1869. The admission of dissenters to the churchyard must involve their admission to the church, and after that the Establishment will be a meaningless form. The loss of the *Vanguard*, which was sunk off Dublin by a sister ironclad, has also been discussed at St. Stephen's, but without substantial result. £500,000 has been sacrificed to Neptune, and as usual, no one is to blame; there have been two or three scape-goats who have been reprimanded and lost seniority, but public attention has been studiously diverted from the real culprits, viz., the Admiralty Board. The two celebrated fugitive slave circulars are still exercising the minds of lawyers and politicians, and a flood of correspondence on the same subject continues to pour into the columns of the daily papers; but as no one can understand what has been done or what is being done or what ought to be done, Mr. Disraeli has invoked the customary *Deus ex machinâ*, and requested a Royal Commission to extricate him from his entanglement. One view of the case strikes every dispassionate observer. If our ships are to be made asylums for runaway niggers, the question becomes complicated; for if it is legal to receive one fugitive, it would be legal to receive five hundred. Where are you to stow them? How are you to feed them? The only plan would appear to be for each cruiser to be accompanied by a transport to be used as an ark of refuge. This is the *reductio ad absurdum*, but what answer have the abolitionists to give?

There have been many changes in our Parliamentary representatives during the recess. Death has been busy in their ranks, and several have been raised to the Upper House. The balance of parties however continues much the same, for, with the exception of Manchester, which has substituted a radical for a conservative, the various constituencies have remained faithful to their past traditions. There have however been some sharp and exciting struggles. At Retford the conservative party, which has monopolised the representation for forty years, only won by the skin of their teeth, and the riotous behaviour of the electors and non-electors quite re-called the good old days when cudgels and sabres were freely used, and "wigs on the green" was the *mot d'ordre*. At Horsham likewise the liberal candidate was elected by a narrow majority, and subsequently unseated by petition. In the second contest, Sir Hardinge Giffard, the Solicitor-General, was vanquished, and is still without a seat, which is a most unusual predicament for one of the legal advisers of the Crown. The Home Rulers still form a strong and united party, and almost invariably support Lord Hartington's views; but of course they cannot be depended on from hour to hour. Their inconsistency was neatly exemplified the other evening. Being Roman Catholics, they would shudder at the idea of allowing a Protestant heretic to be buried in their consecrated grounds, but to a man they voted in favour of Mr. Morgan's measure for, what *they* ought to term, the desecration of churchyards belonging to the Establishment.

Some scandal has arisen in diplomatic and financial circles owing to the sudden departure of General Shenck, the minister accredited by the United States Government to the Court of St. James's. The General has, it would appear, been most unfortunately implicated in a notorious swindle well known in this country as the Emma Mine, and his accusers are so influential, and their accusations so well defined, that he has thought it advisable to hasten to New York to confront the former, and refute the latter. This is his own version of the affair, but it is a significant fact that he left England without taking leave of Her Majesty, a proceeding unparalleled in diplomatic annals, and his successor has already been nominated. If he can clear his character, leave of absence would

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surely have been a wiser selection than resignation; but granting that, for various reasons, he may have preferred the latter, why quit the country with such undignified haste, and give the scandal-mongers such a chance of traducing his fair fame? It is a dilemma; he must have been sadly conscience-stricken, or lamentably ill-advised. The history of the Emma Mine, so far as it can be gathered, is curious, and not altogether uninstructive. Two clever Yankees, father and son, named Chisholm, after "prospecting" unsuccessfully in Utah for seven years, discovered in 1868 a mine which they christened "Emma" after their daughter and sister. They worked it for three years with fabulous profits, and then in 1871, finding the ore beginning to give out, sold it to an English Company for five million dollars. How far the floaters of the concern on the London market were aware of the comparative worthlessness of the property it is not easy to determine; but it is certain that the promoters made a good thing of it, and the credulous investing public, the impecunious widows and struggling curates, have been the victims. The glowing reports of the mine must have been maliciously fabricated, and the eighteen per cent regularly paid to the shareholders for twelve or fifteen months must have been derived from capital. The mine never returned a dollar profit after the English Company was fairly launched. General Shenck's name was included in the list of promoters and directors. So many similar bubbles on a rather smaller scale have burst of late years that the Emma Mine has been lost sight of. But during the last few weeks some energetic dupes, under the guidance of Mr. MacDougall, the city Editor of the *Hour* newspaper, have taken heart of grace, and are proceeding to sift the ugly details. The first result of their action has been the abrupt disappearance of the American Ambassador. I may have some racy disclosures to make in my next. The morality of the city has now, I would fain hope, reached its lowest depth; but in these money-grubbing days, when Ambassadors, Peers, Members of Parliament and country gentlemen soil their fingers with stock-jobbing and speculation, the lowest depth is difficult to define.

The latest fashionable device for dispelling *ennui* has been transplanted from America. Men and women meet like school-children to undergo a competitive examination in etymology; and really, I believe, enjoy it; for although each one trips in his turn, yet, on the whole, the misfortunes of their friends console them for their own discomfiture. This intellectual sport was at first confined to select parochial circles, to young men's associations, to young ladies' boarding schools, and similar gatherings; but some leader of *ton* has elected to patronise the "Spelling Bee," and so we find the Lady A. and the Hon'ble Mr. Z. amicably striving to apportion the due number of s's to "assassination" and the proper allowance of l's to "parallelogram." Society has patronised many less innocuous frivolities. The other day the world of the "Upper Ten" was electrified by a paragraph in the *Morning Post*, announcing that Lady C. would hold a "Spelling Bee" instead of a "small and early." What is a "Spelling Bee?" was the universal query. It is a revival of the sensations of our early school-days minus the accompanying drawbacks of that epoch; what was then considered a permissible form of torture is now regarded in the light of an agreeable pastime. "Everybody" went to Lady C's house, and they were all "charmed."

I am, yours, &c.,
PERIPATETIC.

LONDON, 11*th March* 1876.

HIGH COURT—MADRAS.

MORGAN, C. J., AND INNES, J.

Ancient, impartible, zemindary—Power of holder to alienate.

A sued to recover from B, C, and D portions of an estate which was, he alleged, an ancient zemindary, inheritable and impartible under Hindoo law, which had been improperly alienated by his predecessor.

HELD, *on the evidence, that it was an ancient and hereditary estate; that it had been transmitted according to a particular mode of descent; that it was impartible; and that A's predecessor was not authorized to sell the estate, to raise money, or incur debts for his own extravagant purposes.*

R. A. 82 *of* 1875.

Saluckai Thevar *alias* Oyya Thevar *v.* Pareyasami *alias* Kottai Thevar and three others.*

R. A. 83 *of* 1875.

Saluckai Thevar *alias* Oyya Thevar *v.* Ramasamy Chetty and three others.

R. A. 84 *of* 1875.

Saluckai Thevar *alias* Oyya Thevar *v.* Kosalaram Pillay and another.

THESE were three appeals arising out of the decision of the Subordinate Court of Madura in O. S. 89, 105 and 107, of 1873.

* "Republished from XI, *Madras Jurist*, p. 130."—ED. *R. R.*

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The plaintiff, Saluckai Thevar, Zemindar of Padamathoor, in all these three suits sought to obtain a decree declaring him to be entitled to four villages of his zemindary in the possession of the defendants. He alleged that he was only surviving son of a former proprietor of the zemindary, on whose death it had passed first to his brother and then to his brother's son; that this son had died without issue, and that he was the eldest surviving male member of the family.

Defendants urged that the plaintiff, Saluckai Thevar, was not the heir of the last proprietor: that the Padamathoor estate was not an ancient zemindary, or palayaput; that the villages were partible and alienable, and that they were in possession of them by sale and mortgage from the former proprietor.

The facts of the case sufficiently appear from the subjoined judgments.

O'Sullivan and *Bashyam Iyengar* for appellants.

The High Court delivered the three following

Judgments:—10th November 1875.

These three appeals (Nos. 82, 83 and 84 of 1875) are by the several defendants in three suits brought in the Subordinate Court at Madura, by Saluckai Thevar for the recovery of certain villages said to constitute a pollium or polliaput called Padamathoor in that district. Each set of defendants appeal from the decree pronounced in their case by the Court below in the plaintiff's favor. The suits for the most part involve the same questions, the villages in each suit, and the titles advanced to them by the defendants being, however, distinct. The suits were heard together by the Lower Court, and the documentary and other evidence common to all has throughout been treated as given in all the suits.

We shall proceed to dispose of the first of the three appeals in which the appellants are the representatives and minor sons of Ponnusamy Thevar, deceased. The suit from which this appeal arises is in the nature of an ejectment suit brought by Saluckai Thevar to recover four villages called Puvandy, Padamathoor, Yenady, and Kannariruppu, forming part of the palliaput of Padamathoor, which is described in the plaint as an ancient zemindary impartible and inheritable "according to the custom of other similar zemindaries and the Hindoo law," and the title therein set forth is that plaintiff being the son of Muthuvaduganatha Thevar (who with his undivided brothers Muthusamy and Chinnasawmy were the sons of Oyya Thevar), and being the only surviving grandson of the last named person, is entitled to succeed as the next heir to the late proprietor Dorai Pandien, who was the son of the said Muthusamy, and the grandson of Oyya Thevar.

Exhibit LXXXVIII.

Dorai Pandien died without issue on the 7th November 1861, and the present suit was not commenced until the month of October 1873.

The written statements of the defendants deny that the estate was an ancient impartible estate; they deny also the plaintiff's title to succeed thereto as heir; they state that the last holder was a divided member of a Hindoo family: also that he was competent to charge the estate, and to make alienations for purposes not prohibited by Hindoo law: and they claim to hold each of the four villages under titles derived from such charges and alienations.

Several issues were framed, which will be hereafter noticed, though not in the order in which they were disposed of by the Court below.

We shall consider first that which relates to the character of the estate claimed as the palliaput of Padamathoor. The evidence on this portion of the case is dealt with by the Subordinate Judge in disposing of the 7th issue "whether the estate of Padamathoor is partible or impartible."

The two documents (Exhibits G. and H.), mentioned in the judgment were admitted in evidence in the Lower Court without objection, and neither in the grounds of appeal to this Court nor in argument here has any objection been seriously urged against them. They are copies of original documents of which strictly some account should have been given, and sufficient reasons assigned for the non-production of the originals. The explanation offered and not disputed was that they were produced in the litigation which formerly took place between members of the plaintiff's family, and have since been lost or mislaid. They furnish the earliest information we have of these villages. The first document is dated in 1746, and is addressed to Padamathoor Oyya Thevar on whom it confers the ten villages therein named (among which are the villages sued for) as included in the Padamathoor palliaput, belonging to "self" "paying the tax thereon at 3 fanams per kalam of seed land as had been fixed by the "*Peria Durai*" (great lord, chief lord) before."

Exhibit XLVI.

Of the person making the grant we only know that he is suggested to be the same who is elsewhere described as the son of the Setupathi, who held both Shevagunga and Ramnad, &c.

The other documents, a Sunnud from the Nawab Wallajah, dated 1773, purports to con-

tinue and to confirm in recognition of services by him rendered to the State, Veddyoor Zemindar Padamathoor in the zemindary of taluk of Padamathoor "as it had always hitherto been held."

Upon the occasion of the permanent settlement in 1803 of the zemindary of Shevagunga (within the bounds of which the villages are situate) after the escheat and re-grant of the estate, Padamathoor Oyya Thevar, the then holder of Padamathoor (or his brother) was selected as the person with whom the settlement should be made, and among the settlement papers there is a tabular statement of the resources and collections of the Shevagunga zemindary, importing that in the Kanoor Taluk within which the villages lie, a sum of 1,400 *sulipons* was payable as tribute by the Poliagars. This sum which is shown to be nearly equivalent to the sum of 600 Star Pagodas, which was payable by the holder of Padamathoor is thus treated as an asset of the zemindary. Disputes afterwards arose between the Istimirar Zemindar of Shevagunga and his relations, regarding certain family matters, and also regarding the tenure of the villages (then only 8 villages in number) and the sum payable in respect thereof to the Zemindar. A suit was brought in 1823 by the Zemindar against his three nephews, Muthuvaduganatha, Muthusamy, and Chinnasamy, to eject them for non-payment of the arrears of an enhanced rent claimed by the Zemindar. From the written pleadings in the suit, it appears that the Zemindar so far from admitting that Padamathoor was a separate palliaput subordinate to the zemindary, and subject only to a quit-rent as alleged by his opponents, distinctly averred that their interest in the villages was derived from himself subsequent to his accession to the zemindary, and that in effect it differed little if at all from the ordinary right of ryots of the zemindary. The suit was compromised in 1826, and in the compromise it is declared that "the defendants who had not only insisted on their right to the paliaput, but also advanced claims to the zemindary, are not entitled to the Shevagunga Samasthanum, and that

Exhibit XLIX.

they should pay in each year to the plaintiff the circar kist of Parangi Pagodas 1,000, or 833 Star Pagodas for the 8 villages referred to in the plaint, and which were continued to be enjoyed by the defendants ere this;" and that the defendants should enjoy the said villages for ever. The document also provided for the payment of arrears of kist due to the Zemindar.

The effect of this compromise apparently was that without recognition of the palliaput, and in terms hardly consistent with its existence, the defendants were nevertheless continued in their tenure of the villages though at a rent enhanced beyond that fixed at the time of the settlement. The permanent character of the tenure was recognized by the Zemindar, notwithstanding that by arrangement with his nephews he now succeeded in obtaining from them as if from ryots an enhanced annual payment.

No agreement between them could be effectual to alter or enlarge the Zemindar's rights in contravention of the provisions of the Regulation of Settlement (Reg. XXV of 1802, Sections 4—12) Bearing in mind who the parties were to this arrangement, and what were the circumstances attending the compromises, it appears to us to deserve but little weight either as evidence of the real character of the estate, or as working a change in any of its incidents.

On the death without male issue of the Zemindar of Shevagunga in 1829, his eldest nephew Muthuvaduganatha succeeded to the zemindary, and relinquished Padamathoor to his brother Muthusamy, the second son of Oyya Thevar. The deed of relinquishment recites the death of the Zemindar, and appoints Muthusamy "as our next younger brother," Zemindar of the palliaput of Padamathoor.

It proceeds thus:—"Now that Parvathavurthanee Nachiar, one of the pattam wives of our abovementioned junior paternal uncle is pregnant, we shall act as usual in the matter of the said palliaput in the event of her giving birth to a son, but should she be delivered of a daughter, we and our offspring shall have no interest in the said palliaput, but you alone shall be the Zemindar and rule and enjoy the same, allowing at the same time, according to the former arrangement to the younger brother P. Bodhagurusamy Thevar the villages assigned to him.

Exhibit XLIV.

Muthuvaduganatha and his descendants continued in possession of the zemindary until they were ejected under the authority of the decree of the Privy Council in 1863. His brother Mutusamy Thevar held the Padamathoor palliaput until his death in 1835, when his son Durai Pandien succeeded and held possession until his death in 1861.

Of the ten villages mentioned in the grant of 1746, eight only are named in the compromise of 1826, and of these villages it is admitted that one, the village of Chembur, having long ago been given to Vailai Nachiar, who was the sister of Muthuvaduganatha for maintenance has never been resumed, but has continued in the possession of her descendants or of those to whom it has been transferred by them.

Of the two other villages, we have no account beyond this, that they are stated in the answer of the defendants in the suit of 1823 to have

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been given to the defendant's ancestral *dayadies* (cousins.)

No evidence was adduced in the Court below to throw further light on the character of the estate, or on the course of possession and enjoyment. The existence of the tenure in the middle of the last century is apparently recognized both by the superior lord and the ruling power; and in the settlement proceedings of 1802 the quit-rent payable to the Zemindar being alone included in the assets of the settlement, the palliaput is recognized though not expressly mentioned like some others (which are taluks in themselves) and is excluded therefrom. Although the litigation in 1823 between the Zemindar of Shevagunga and his nephews respecting Padamathoor conducted as it was on both sides in a most hostile spirit, shows that the former then asserted rights inconsistent with the existence of the palliaput, and the subsequent compromise contained no recognition of it, the conduct of the family afterwards, the mode in which the estate was dealt with, and held from the succession of Muthuvaduganatha to the zemindary until Durai Pandien's death in 1861, show that the old character of the estate was recognized. In our opinion it may fairly be deduced from the evidence that this is an ancient hereditary estate, and further, that it has been transmitted according to a particular mode of descent, and that it is impartible. We have directed evidence that it has been held ordinarily like a pallium by one person at a time, and there is also evidence of the impartible character of the property. Upon the question of impartibility, it is said that the mode in which Muthuvaduganatha and his two brothers were sued first by the Zemindar in the suit brought by him in 1823, and afterwards in 1837 by Ramanadan Chetty and Lakschmanan Chetty the mortgagees tend to disprove this. Considering the object of the litigation in each case all the brothers would, it might be expected, be therein made defendants. And even were this not so, no inference of any weight can be drawn from the fact that Muthuvaduganatha was not regarded by the plaintiffs or their advisers as the only necessary party to the suits. But it must be admitted that in the first suit the three brothers by their answer while insisting that the estate was a palliaput held by them in the same manner as their ancestors had enjoyed it, appear to assume that they themselves then had a joint and equal interest, a contention not consistent with their subsequent conduct when the eldest brother succeeded in 1829 to the Shevagunga zemindary. A partition suit brought by Chinnasamy against Durai Pandien in 1844, which was pending at the time of Chinnasamy's death, and another suit by his widow in support of an alleged adoption are also referred to. These suits were dismissed, nothing having been therein determined respecting the partible character of the property, which was denied by the defendant, and which, until that time, had never been asserted by Chinnasamy, otherwise than in the answer to the Zemindar's suit.

Exhibit LXXXVI.

Exhibit LXXXVII.

The proceedings of the Inam Commissioner, in the year 1864, are also relied on, which have resulted in separate settlements of several villages with those who were then their respective holders, no claim to the settlement having been advanced on behalf of the ex-Zemindar of Shevagunga, in whose name some villages of the palliaput were recorded by the Collector.

It is true as has already been noticed that we have little direct evidence of the mode in which the villages have been held and enjoyed, and it is certain that some of the villages having been assigned for maintenance to members of the family, have never been restored or recovered by the holder of the palliaput for the time being, and are now found in the hands of strangers. There is nevertheless, we think, evidence of the fact that the Padamathoor estate has been transmitted for several generations by a peculiar mode of descent, and its special and impartible character has been recognized by the family except on the occasion of the dispute between Muthuvaduga and his nephews in 1823, and has not since been questioned until the suit of Chinnasamy in 1844. Neither the default of the holder or of the person entitled to the estate in respect of the non-resumption of particular villages assigned for maintenance or otherwise, nor the Inam Commissioner's proceedings, materially affect the weight of the evidence.

We conclude that Padamathoor is shown to be (apparently like other similar groups of villages in the Shevagunga zemindary) a palliaput impartible, and therefore held by one member of the family and descending on a single heir.

The decision of the Court below on the 7th issue is to this effect:—

The plaintiff claims the succession through his father Muthuvaduganatha. The defendants deny his legitimacy, and the 1st issue in the case is whether the plaintiff is the son of Muthuvaduganatha, the son of the acknowledged Istimirar Zemindar of Shevagunga. Upon this issue, evidence was given by members of the Zemindar's family and by others, both of the fact of a marriage celebrated with considerable ceremony, and that the plaintiff both before and after the accession of his father to the Shevagunga zemindary had always been treated by the Zemindar himself and by

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others in a manner not different from his other children. This evidence fully satisfied the Subordinate Judge, and all that we find alleged against the decision is that in the family pedigree given in the course of litigation, which has from time to time occurred, the plaintiff's name has not found place, and that in an account of disbursements made to the relatives and servants of the Zemindar of Shevagunga from 1849 to 1854 by the guardian under the Court of Wards the amount allowed to Pacheathal, the mother of the plaintiff, is only ten rupees (Rs. 100 being allowed to Pichamanachiar, another widow), and that she is described as அன்னியஸ்திரி *anniashree*—another woman=woman from another caste: the word used being the same as is used in referring to the admitted wife of the Zemindar.

The parties were both of the Sudra caste, the husband being of one part of the caste and the wife of another part or a sub-caste. Her condition in life before her marriage was much below his. The circumstances abovementioned may probably thus be sufficiently accounted for. However this may be, they are insufficient to counter-balance the direct evidence in favour of the plaintiff's legitimacy. We concur with the Subordinate Judge's finding on this issue.

The defendants not only denied the legitimacy of the plaintiff, but also asserted that Durai Pandien, the last proprietor, having left a widow Vellai Nachiar who is still alive, the right of suit is with her, and not with the plaintiff.

The Subordinate Judge regarding the suit not as raising any question between contending heirs, but as a suit brought to recover from stranger's family property unlawfully alienated by a member, held that the plaintiff might sue subject to any question between himself and others concerning the right to the inheritance. It appears to us that the right of Durai Pandien's widow, which was the only right urged in the Court below as prior to the plaintiff's, cannot be maintained, for the estate of Durai Pandien was not a separate acquisition by him, following the course of succession prescribed for separate estate, but an ancestral estate of the character already mentioned, the right to which would rest on his death without issue in the next collateral male heir of the undivided family in preference to the widow.

In the Court the defendants have urged a new ground of objection to the plaintiff's competency to sue which is said to arise on the plaintiff's deposition given in the suit. It is urged here that "there are preferential heirs to the estate who are descendants of an elder branch of the family." We find that the plaintiff in his cross-examination after mention of Muthu Ramalinga Shervai, the son of the Istimirar Zemindar, whose legitimacy was questioned in the suit of 1823, says that his, the deponent's, elder brother had two sons (by a kept mistress), and that there are three grandsons of his still living. The enquiry was not so far as is shown fully pursued, nor was the Court asked to decide upon the matter; and the issue already noticed respecting the prior title of Durai Pandien's widow was alone tried and disposed of. A decision unfavorable to the defendants having been given, they now seek in appeal to bring forward for the first time an objection to the plaintiff's right to sue which they declined to urge in the Court below. We think they cannot fairly be permitted in this stage of the case to defeat the suit by such an objection. If there are other and nearer heirs, their rights will remain unaffected, and any decree to be now given may make reservation of such rights.

The plaintiff for the purposes of the present suit may be regarded as entitled to the succession, and it is unnecessary to consider the arguments which were addressed to us and the subject of the course of descent of this property on the assumption that there were in existence descendants of his elder brother.

Issues were framed on the subject of the alleged relinquishment of Padamathoor by Muthuvaduganatha to his brother Muthusamy in 1829, and on the effect of that document (which was not in fact disputed) as in itself a bar to the suit, the Istimarar Zemindar having left no male issue; and also, in regard to the defence which was set up that the suit was barred by the Law of Limitation.

The appellant's contention on this part of the case we understand to be that the instrument of relinquishment precludes all claims on the part of Muthuvaduganatha's descendants, that the family can no longer be regarded as they admittedly were originally as a joint and undivided Hindoo family, and that under the terms of the Limitation Act XIV of 1859, the plaintiff's claim is barred, because Muthuvaduganatha and his descendants are not shown to have participated in the income or profits of Padamathoor since the year 1829. Although the fact of the division of the family in or before the year 1829 was alleged by the defendants in their written statement, no evidence of this was adduced, and it is only from the mode of enjoyment of the property and from the effect attributed to the instrument of relinquishment that this is inferred. We think it clear that the family must still be regarded as a joint Hindoo family, and that Muthuvaduganatha's renunciation of his right in 1829, whatever its operation on himself and his descendants in possession of the zemindary of Shevagunga, cannot operate further, and that upon the death of Durai Pandien without issue, the right of succession

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which then opened to the members of this joint family was not affected by such renunciation. The words "we and our offspring shall have no interest in the said palliaput, but you alone shall be the Zemindar and rule and enjoy the same," must be construed with due regard to the person using them, and the occasion when they were used. They refer to the estate and rights of the new so-called Zemindar of Padamathoor and amount to a declaration that the palliaput shall be enjoyed by him exclusively, the Shevagunga Zemindar disclaiming any joint interest. They are not a release by the latter for himself and his heirs of all future rights of succession which might accrue to them as members of an undivided family. The possession of Padamathoor by Muthusami after this relinquishment cannot be regarded as a new and separate acquisition, and no question upon the Law of Limitation can arise between the different members of the joint family in respect of the property thus held by a single member.

Upon a wrongful alienation of the property to a stranger by the holder for the time being, and not before the question of limitation may arise, and under the sixth issue the defendants further contended that the suit was in this view barred.

The Law of Limitation which governs this suit is Act IX of 1871. According to the Clause 145 of the second Schedule of the Act, the time of limitation for a suit like the present (which has not otherwise been specially provided for) is twelve years from the time when the possession of the defendant or of some other person through whom he claims became adverse to the plaintiff. Several of the defendants in the three suits hold under mortgage titles, and as to these no question of limitation arises. In one instance only a title by purchase from Durai Pandien (of the village of Puvandy) in December 1860 is relied on, and as this was more than twelve years before the suit it is necessary to determine whether the possession of the purchaser Ponnusamy Thevar, through whom the appellants claim, became adverse to the plaintiff at that time. It must, we think, be held that Ponnusamy Thevar's possession of the village under his purchase from Durai Paudien first became adverse to those entitled to claim this village upon the death of Durai Pandien in November 1861, and not before, and that computing from the date of his death (7th November 1861), this suit is brought within the appointed period. The vendor was in the condition of the family the owner of the property (subject it may be to claim for maintenance in others), and was entitled to dispose of it for his own purposes to the extent of his life interest but not beyond.

Upon the issue of limitations and the connected issues our decision is in concurrence with that of the Subordinate Judge.

There remains for consideration the validity of the several defences set up under titles by mortgage and sale in bar of the plaintiff's claim.

This suit is, as has already been stated, in the nature of an ejectment suit brought by the plaintiff as heir of the last proprietor to recover the property from strangers, and notwithstanding the delay in bringing the suit of which no clear explanation has been offered beyond the suggestion of want of the necessary funds, the plaintiff is entitled to recover unless the defendants show that the several charges and alienations made by the late proprietor Durai Pandien were duly made by him so as to bind the estate.

As to the factum of each charge and alienation, there is no dispute, and the payments by the defendants have not been questioned by particular evidence. The contention on the plaintiff's part in the Court below was that the defendants failed to show that the estate was liable beyond the life of Durai Pandien, and the decision of the Subordinate Judge upon this was in the plaintiff's favor, the defendants having adduced no reliable evidence to support a charge against the estate. Former debts have been discharged, but there was no proof that such debts were themselves legal charges upon the estate, and it had been shown that only a small fraction of Rupees 5,000 remained undischarged of the debts of former proprietors at the date (1854) of one of the earliest of Durai Pandien's mortgages.

Upon the authority of a recent decision of the Privy Council it was urged on behalf of the defendants that in the circumstances they should not be put to the proof of a legal necessity for the creation of the charges; but the Subordinate Judge held, citing a decision of this Court, that the burden of proof that the debts were contracted fairly, and for family purposes still lay upon the defendants, and that they were bound to discharge it. The judgment (12th May 1874) of the Lords of the Judicial Committee of the Privy Council on the appeals of *Girdharee Lall* v. *Kantoo Lall* and *Madu Thakoor* v. *Kantoo Lall* is the Privy Council decision referred to by the Subordinate Judge. It was contended for the appellants that according to this decision the Subordinate Judge was in error in requiring from them evidence in support of their claim beyond that which they had given. Indeed, the appellants' arguments went the length of insisting as they had before done in their written statements that the late proprietor was by the Hindoo law fully competent to alienate and charge the estate as

he pleased, and that his acts could not be questioned by the next heir, but even if this were otherwise, they were relieved as the law now stood from the burthen of proving a necessity for the several charges and alienations.

The appellant's contention is, we think, based on a misapprehension of Durai Pandien's true position and powers and of the decisions cited.

At the time of the alienations, his ownership of Padamathoor did not resemble the ownership of the two sons of Kunhyalall in the case cited in the property which had descended to them, and which they burdened with their debts. nor is the plaintiff here in the position of the plaintiffs in that case who sued in their father's life-time, and probably, as is stated, at his instigation "to turn out the *bonâ fide* purchaser who gave value for the estate."

Durai Pandien was a member of an undivided Hindoo family, subject to the law of the Mitakschara, and the estate held by him as representing the second branch of the family, although subject to the peculiar incidents which have been mentioned, and possessed by him free from present coparcenary rights in others was not entirely at his disposal for his own purposes. We think he should be regarded as possessing only the qualified powers of disposition of a member of a joint family with such further powers, or it may be with such restrictions as spring from the peculiar character of his ownership, and that these powers fall short of a right of absolute alienation of the estate.

If we are right in this it is to be seen whether, as the law stands, the appellants can justly object that they were subjected to the burthen of proving that the moneys advanced by them were advanced for necessary and proper purposes under circumstances which entitle them to claim a charge upon the estate.

The rule as stated by the Privy Council in the case reported in the 6th volume of Moore's Indian Appeals has not, so far as we are aware, been departed from, and is applicable here although the alienations are by a member of a joint family, not by a manager.

Hunooman Persad Panday v. Massoomut Baboor Munra Kunwaree.

"Their lordships think that the question on whom does the *onus* of proof lie in such suits as the present is one not capable of a general and inflexible answer. The presumption proper to be made will vary with circumstances, and must be regulated by and dependent on them."

Of the dictum there quoted to the effect that if the factum of a deed of charge be established, and the fact of advance be proved, the presumption of law is *primâ facie* to support the charge, and the onus of disproving it rests on the heir—it is observed that it "must be read in connection with the facts of that case. *It might be* a very correct course to adopt with reference to suits of that particular character, which was one where the sons of a living father were, with his suspected collusion, attempting, in a suit against a creditor, to get rid of the charge on an ancestral estate created by the father on the ground of the alleged misconduct of the father in extravagant waste of the estate."

The latter judgment of the Privy Council was pronounced in a suit of this particular character with the difference that the defendants in the suits were *bonâ fide* purchasers of property sold or attached, and about to be sold in execution of decrees in contested suits in which the creditors' claim had been established against their debts.

Whether the appellants in this case can claim to be regarded as *bonâ fide* purchasers, or are otherwise entitled to any relaxation of the rules of proof in favor of their claims, will appear on a statement of the circumstances in which these claims are founded. Whatever presumption may arise unfavorable to the respondent in consequence of the long delay in the institution of the suit, it cannot be said that the respondent (the plaintiff), is here seeking to get rid of charges on ancestral property at the instance of or in collusion with the person by whom they were made.

The appellants claim the four villages of Padamathoor, Puvandy, Yenady, and Kannariruppa by distinct titles.

Two of these villages (Puvandy and Yenady) like the three villages of Arasanoor, Pappagudy, and Kanakkangudy, claimed in the other suits, were so far back as the year 1827 charged with the sums amounting to Rupees 23,000 for purposes connected with the family benefit, and from the Sudr Court's decision in Appeal Suits 3 and 4 of 1839, it appears that a balance on account of principal and interest of 38,820 Rupees was then due which the plaintiffs were declared entitled to receive from the five villages mentioned.

In 1854 a balance of Rupees 5,487 remained due under this decree, for which, together with other sums then alleged to be due under decrees obtained in subsequent suits, the two villages of Puvandy and Padumathoor were under a compromise arrangement made in a suit mortgaged to the decree-holders for a period of ten years, the usufruct being given in lieu of interest.

In November 1860 Durai Pandien being in prison (it is recited in the deed evidencing the charge) for the amount of a decree then recently

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obtained borrowed from Ponnusamy Thevar a sum of 50,000 Rupees for this and other purposes (including 5,480 Rupees alleged to be paid on account of the sums borrowed by Durai Pandien for his household expenses), and therewith it is stated discharged the amounts of this and other decrees (including the balance due under the decree of the Sudr Court); receiving from the mortgagees an assignment of the village of Puvandy according to the terms of the compromise of 1854 under which it had been acquired. In the following month Ponnusamy Thevar purchased the village from Durai Paudien for the sum of 100,000 Rupees, of which 13,500 Rupees is in the deed stated to have been received in cash. The mortgagees had then been in possession of the two villages since 1854, and by the law in force were accountable for their receipts from the mortgaged property. The appellants rely on this purchase, and the payments made to Durai Pandien and his creditors. To the extent to which the original charge remained unsatisfied in 1860, when the advance by Ponnusamy Thevar was made, he and his representatives would be entitled to support a claim against the estate. Of the old debt only Rupees 5,487 remained due in 1854, and the mortgagees having had on account of this and other claims the usufruct of both villages for six years, it may be assumed that no larger sum was due in 1860.

Except as to this sum, we have no evidence to explain the expenditure beyond the alleged fact that it was in satisfaction of the decrees already referred to, and of other decrees vaguely mentioned in the purchase deed. The first payment of 50,000 Rupees procured, it is said, Durai Pandien's discharge from prison, and a portion of this (5,480 Rupees) with the sum of 13,500 Rupees already mentioned are represented to have been paid to Durai Pandien in cash or for his household expenses.

It is to the documents showing these transactions that the defendants refer in the 5th paragraph of their written statement, where they say that " for a considerable time prior to such sale, the said village was in the possession of certain Chetties by virtue of mortgages, razinamahs, and decrees for debts incurred by the said Muthuvaduga Thevar and Muthusamy and the said Oyya Thevar. The encumbrances on the said village amounted to about 86,000 Rupees, which sum was paid by Ponnusamy Thevar to the creditors shortly before the sale of the village to Ponnusamy Thevar."

The defendants, without expressly relying on the defence that there was a *bonâ fide* purchase for value without notice by Ponnusamy, sought to support the purchase by allegations not only that hese were old precedent debts of ancestors not before questioned, which were satisfied by the purchaser, but also as the recitals in the purchase deed and prior documents are apparently meant to show that the pressure on the estate or on the late proprietor at the time of the discharge of the debts was such as to justify the payments made in good faith by Ponnusamy.

The condition and character of the vendor at that time, and for many years before that time is beyond dispute, and is thus described in one of the appellant's Exhibits which was read: " It is well known in the history of litigation in this district, that the late Zemindar of Padamathoor was, as the phrase is, head over ears in debt, and that he was in the habit of mortgaging and hypothecating over and over again every scrap of land he could lay claim to." According to one of the plaintiff's witnesses, " he would take 400 or 500 Rupees from the Chetties and grant them documents for large amounts." A witness for the defendants says, "I do not remember whether it was the custom of the Zemindar to receive 1,000 Rupees and grant documents for 10,000 Rupees or not. It is true he granted documents in that manner to some people." Without attaching undue weight to either of these two witnesses' evidence, we have here a concurrence of testimony on both sides to the reckless extravagance of Durai Pandien.

A principal creditor in the transaction which immediately preceded the sale was Narrain Chetty, his ancestors (the plaintiffs in the suit brought in 1837) had long had money lending transactions with the family. These persons and Ponnusamy Thevar were residents in the district. The name of Ponnusamy Thevar is prominent in the family litigation, which for many years had taken place. Connected with the family, he was admittedly well acquainted with its affairs. He himself occupied for many years some place of trust or management in the Ramnad zemindary. It is not disputed that in the position of these parties the inference may justly be drawn that Ponnusamy Thevar in his dealings with the late proprietor cannot be regarded as a stranger without knowledge of his true position and of his antecedents and circumstances. By the mention of mortgages, razinamahs, and decrees in the written statement and the purchase deed and elsewhere, it is intended, we understand, to assert that the advances made were upon securities which had formed the subject of suits, and had been substantiated in a Court of Justice. No doubt, in some instances there had been, as in the suit brought in 1829 against Muthuvaduga, Muthusamy and Chinnasami, adjudications in contested suits, but the general character of the transactions between Durai Pandien and his creditors, notwithstanding the intervention of decrees of Courts, was, it is admitted on all sides, very

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different from that which is suggested. Ordinarily the so-called decree was merely a mode of recording formally a previous compromise arrangement (usually also hypothecating property mentioned therein), the terms of which being embodied in an application made by the parties, were filed by leave of the Court. No formal order or decree was subsequently drawn up, but in accordance with an irregular practice which formerly prevailed in this and some other districts, process of execution was sometimes applied for and issued as if upon a formal decree to enforce the rights of the parties to the compromise.

Such being admittedly the general character of these razinamah arrangements, it cannot, we conceive, be said that the advances alleged to have been made by Narrain Chetty and others, are in any way substantiated by such proceedings.

The existence of old unquestioned debts of Muthuvaduga and Muthusamy has not been shown by trustworthy evidence, except in the single instance of the Sudr Court decree for the satisfaction of which both the Zemindar of Shevagunga and the owner of Padamathoor were liable; and we find no reason to differ from the Subordinate Judge's conclusion that of the ancestral debts, and particularly of this decree, only a small portion (5,480 Rupees) remained undischarged in 1854 at the date of the usufructuary mortgage. There is certainly some oral evidence showing ancestral debts, but it is of a description which without further corroboration than it has received, we could not safely receive to charge the estate.

Durai Pandien succeeded to the property on his father's death in 1835, more than 10 years before the date of the first of the razinamah decrees mentioned in the deed of sale, and it cannot be assumed that the sums mentioned in these documents were sums advanced to his ancestors. If, like the sum of 13,500 Rupees mentioned in the purchase deed and other like sums they were in truth advanced to him or on his behalf, such advances cannot without further proof in this case sustain a charge on the property. In respect only of the sum of 5,480 Rupees due under the Sudr Court's decree has any ground been shown, and as to this, even admitting that on adjustment of the mortgage accounts (on the lowest estimate of the annual proceeds of this village) anything remained due, the amount would not be such as to justify a sale of the property. If the advances were not otherwise binding on the estate, the additional facts alleged in the purchase deed, and the previous document of Durai Pandien's release from jail, and of his protection from arrest by means of the moneys paid by Ponnusamy Thevar, could be of no avail to the latter, who was, we are satisfied, well aware of Durai Pandien's previous career of extravagant waste.

The estate which he inherited was, as is apparent from this litigation, one of considerable value, and we cannot presume in the appellant's favor in the absence of trustworthy evidence, that the income fell short in amount of what was reasonably sufficient for the maintenance of the surviving members of this branch of the family.

If the late proprietor possessed by Hindu Law only a limited and qualified power of disposition, his acts of waste resulting in the alienation of the whole estate cannot be regarded as valid charges and alienations on such proof as has been here given. The devices of razinamah decrees and of process of execution issued thereon against his property and person can give no support to loan transactions otherwise not established as valid charges on the estate. To hold otherwise would be apparently to place ancestral property completely at the disposal of any prodigal owner of the character of Durai Pandien.

The village of Padamathoor is said to have been mortgaged by Durai Pandien "to Udayappa Chetty and certain other Chetties," from whom Ponnusamy Thevar took an assignment. Udayappa Chetty having in respect of the amount due by Durai Pandien on a bond for 7,475 Rupees obtained a decree and being himself the assignee of other "razinamah decrees" against Durai Pandien charging this village, transferred his interest to Ponnusamy Thevar in the year 1868.

Dada Miya, the eighth defendant in this suit (the assignee of another creditor), having a similar charge, sued Durai Pandien's widow as his representative, and in execution of the decree obtained in the suit, sold and himself became the purchaser of the equity of redemption (as it is stated in the written statement) in the village which he has since assigned to the appellants to secure a sum of Rupees 4,825.

We have, respecting this village, no evidence beyond the fact that the appellants are shown to stand in the place of Udayappa Chetty and others who had in former years advanced moneys to Durai Pandien, and (in one instance) to his wife; and who had obtained securities of the description already mentioned. Further, the appellants or Dada Miya have acquired whatever interest may have passed upon the sale in execution of the decree obtained against Durai Pandien's widow. Upon this evidence, we cannot hold that the debt is a charge upon the village as against the present plaintiff.

The village of Yenadi is in the written statement said to have been mortgaged at different times to Mangalashwara Nachiar and others. In January 1856 1-16th of the village which

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under a razinamah decree had been mortgaged to the plaintiff in a suit (No. 11 of 1853) brought against Durai Pandien for a sum of Rupees 1,688, was transferred to Mangalashwara Nachiar, wife of one Pula Thevar, residing at Ramnad. In August 1867 Ponnusamy Thevar, on payment of a decree of 4,800 Rupees, received quarter of the village from Muthu Chetty, who is described as having obtained a transfer of Mangalashwara Nachiar's mortgage interest. Previously in 1859, Ponnusamy Thevar had obtained from other persons a transfer of their interest in a mortgage for a term of ten years of one half of this village on payment of 13,743 Rupees. The purchase by him of the equity of redemption in this village was in March 1866, when in execution of a decree obtained by creditors against Durai Pandien (Suit No. 1 of 1859 in the Civil Court of Madura) in his life-time [his widow alone being then described as his representative] his rights and interests in the village were offered for sale, and Ponnusamy Thevar became the purchaser.

Admitting the fact that Ponnusamy Thevar paid former debts and took assignments of the securities, this alone is not sufficient to enable him to claim a charge on the village against the plaintiff.

As to the purchase of the equity of redemption, it is not shown that the decree in the Suit No. 1 of 1859 differed in any respect from the razinamah decrees obtained by other creditors, nor is it explained how proceedings in execution having been against Durai Pandien's widow alone as his representative, the property now in question could be affected. Even assuming the decree to have been one whereby the claim of the creditors was substantiated, the proceedings in execution could not be effectual to pass to the purchaser any right or interest in the village.

The village of Kannarirnppu, the equity of redemption of which is said to have been purchased in 1866, is stated like Yanadi to have been mortgaged at different times to persons whose mortgages were afterwards redeemed. The evidence in respect to this village does not carry the case in support of the charge further than in the case of Yanadi.

We are of opinion that the appellants have failed as to the four villages to show that they are entitled as purchasers or mortgagees to withhold from the respondent the ancestral estate which he has inherited.

We shall affirm the judgment of the Subordinate Judge, and dismiss the appeal with costs.

R. A. 83 *of* 1857.

Ramasamy Chetty and three others are the appellants. The suit was brought then for the recovery of Arasanoor and Pappagudy, two villages of the palliapntt of Padamathoor, and was in all other respects like the suit brought by the plaintiff against Ponnusamy Thevar's representatives. The appellants claimed to be mortgagees of these villages, and purchasers of the equity of redemption.

These villages, with three others, were in 1827 mortgaged to or charged in favor of the father of Ramanadan Chetty and Latchmanan Chetty, and by a decree of the Sudr Court made in 1839 this charge was established, and the amount due in respect of it was ascertained to be 38,820 Rupees. In 1854 this amount having been, in great part, satisfied, Narrain Chetty representing the persons above named, obtained a fresh security for the sum of 5,487 Rupees, the balance then remaining due, and for other moneys alleged to be then due from Durai Pandien. The villages of Puvandy and Padamathoor were mortgaged to him for ten years to secure the sum of 48,874 Rupees, being the amount then ascertained to be due to him.

The two villages now in question were about the same time mortgaged for ten years to Arunachella Chetty, the appellant's father, to secure a sum of Rupees 17,692, said to be due under a decree in a suit (Original Suit No. 1 of 1852) on the file of Udalut Court of Madura, and another decree of the Subordinate Court. Having obtained a transfer of the decrees, an arrangement by way of compromise was made to the above effect and filed in Court. It was thereby stipulated that Arunachella Chetty should receive the usufruct in lieu of interest for the term of mortgage, and that on non-payment of the principal sum, the amount should be recovered "through process of the Court" from the two villages and the defendant's other property. According to the written statement, these villages were under the two razinamahs filed in the Civil Court on the 3rd February 1860, "mortgaged to first defendant's father by the said Oyya Thevar *alias* Gouri Vallabha Thevar for Rupees 128,133-13-8. Shortly before the date mentioned, an arrangement similar to that already noticed was made and filed in Court, which, after referring to the compromise of 1854 and to several razinamahs in suits brought in the three previous years, and ascertaining an amount of 106,928 Rupees to be due for principal and interest, provided for an extension of the mortgage terms for three years. In the event (it was stipulated) of any obstruction at any time henceforward as to the enjoyment of the two villages under mortgage," Arunachella Chetty was declared entitled to recover "by means of a precept of the Court the principal and interest on the responsibility of the villages and of the defendant's other property."

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About the same time, another like arrangement was made and filed relating to a sum of 21,205 Rupees.

Under these arrangements, Arunachella Chetty was entitled, subject to an adjustment of accounts under Regulation XXXIV of 1802, Section 9, to hold the village during the mortgage, and under a practice then prevailing; process of execution would have been issued on his application against the villages and against the debtor's other property.

The appellants also claim to be purchasers (in the name of Ramiengar the 4th appellant) of the villages at a sale in execution of a decree obtained in 1866 by one Meenakshi Ammal against Vellai Nachiar *alias* Kanaka Nachiar, the widow of Durai Pandien.

The plaintiff in that suit had obtained in 1859 a decree by consent or after compromise against Durai Pandien for a balance of 870 Rupees due on account of a bond given for 1,559 Rupees. The terms of the compromise provided for a payment of this sum in two months, and on failure, for the levy of the amount by Court precept from all the resources of the defendant's zemindary. Five years after her husband's death, a suit was brought against Vellai Nachiar for 2,358 Rupees said to be due under this compromise, and the defendant not appearing, the Court gave a decree for the amount. In the judgment, though not in the decree, the defendant is described as the legal representative of Durai Pandien. In execution of this decree, the right, title and interest of Vellai Nachiar (the widow of the deceased Zemindar Durai Pandien) in the village was sold to the appellants.

As upon Durai Pandien's death his widow beyond her right to maintenance derived no interest in the property, and in regard to it was not her husband's representative, it cannot, we conceive, be held that by this sale any further right passed to the appellants. Whatever claim they may now have, must rest upon the mortgage title advanced by them. In support of this, we have at the most evidence of sums advanced to the late proprietor, and secured in the manner we have stated. So far as the advances made by Arunachella Chetty or his father can be traced, they may be regarded as advances made to Durai Pandien. The profits of the villages were adequate to the discharge of encumbrances of an earlier date. Durai Pandien was not authorized to sell the estate, or to raise money, or incur debts for his own extravagant purposes and without limit. Notwithstanding the long delay on the plaintiff's part, he is entitled to require from the defendants further evidence than they have given in support of their charge, and in the absence of such evidence we hold that the Court below has rightly decided that the plaintiff was entitled to a decree.

This appeal will be dismissed with costs.

R. A. 84 *of* 1875.

Kosalaram Pillay and Vasudeva Pillay, who are the appellants in Regular Appeal No. 84 of 1875, purchased the village of Kanakkangudi, one of the villages of the palliaput of Padamathoor, from one Fischer, on 7th September 1864.

In their written statement, they merely mention the fact of purchase. They have not either in allegation or in evidence put forward anything in the nature of a defence to the effect that they are *bonâ fide* purchasers without notice for a valuable consideration, although the fact that Fischer received from them the purchase-money mentioned is not disputed.

The appellants must, we think, be regarded as occupying the place of Fischer, and it is necessary to ascertain what his position was before the sale by him.

His title commenced in 1854, when three compromise arrangements of the kind already described were filed in Court on behalf of himself and the late proprietor of Padamathoor, purporting to charge for Fischer's security different portions of the village. These all bore date the 17th day of October 1854, and were respectively made to secure payment of the sum of Rupees 700,06,750, and 3,250, the two latter sums being due to Fischer for money lent.

Under these razinamah decrees Fischer entered into possession, which he was entitled to do by the terms of the arrangements according to which a power of sale (by Court process) was given to him on non-payment of the money after four years. On the expiration of this

time, Fischer caused the village to be sold in execution of the decrees.

The debt for 7,000 Rupees to which the first of these decrees relates arose thus—

Fischer obtained by purchase and transfer from the plaintiff in an old suit (which had been decided by the Sudr Court ultimately, the appeal being then numbered 23 of 1844) a decree for a sum of 3,910 Rupees, which, with interest, is computed at the time of the compromise to amount to 7,000 Rupees. This suit was brought against Vijayalakshmi Nachiar, the mother of the late proprietor of Padamathoor, who had, according to the recital in the compromise of 1854, undertaken to pay the "transfer plaintiff" Fischer the sum of 7,000 Rupees then ascertained to be due.

In regard to this decree, Fischer, as the transferree, must be considered as in effect the holder of the decree in the same sense and with the same right as the original plaintiff, except in so far as the arrangement of 1854 may have strengthened his claim.

Upon these three decrees process of execution having issued on the application of Fischer in January 1859, the right, title, and interest of Durai Pandien in the property was attached and sold, Fischer himself becoming the purchaser. It is upon the title thus obtained by Fischer that the appellants rely. No evidence was adduced by them to show under what circumstances Fischer's advances were made. The facts that the advances were made, and that they were secured by the razinama decrees are alone relied on, and they are insufficient to support the charge. The debt undertaken by Durai Pandien in respect of the decree obtained against his mother could not by such undertaking become a charge upon the village. The subsequent purchase by Fischer himself in execution of his own decrees, we conceive in no way varied or strengthened the claim of Fischer against the property.

No debt or claim affecting the property having been shown, the plaintiff was rightly held to be entitled to a decree. We shall affirm the judgment, and dismiss this appeal with costs.

OFFICIAL PAPER.

Colair Lake Irrigation.

Proceedings of the Madras Government, Revenue Department, 17th January 1876.

Read the following Proceedings of the Board of Revenue, dated 2nd November 1875, No. 3,023 :—

Read the following letter from H. NEWMAN, Esq., Acting Collector of the Kistna District, to H. E. STOKES, Esq., Acting Secretary to the Board of Revenue, dated Masulipatam, 28th September 1875, No. 1,258.

I have the honor to reply to Board's Proceedings No. 3,260, dated 12th November 1874.

2. I am of opinion that the proposal in Colonel Mullins's memorandum to lower the level of the Colair Lake as much as possible is the best that can be made in regard to it.

3. The dalwa cultivation is not* very extensive, and, except since the breach in the bund was filled in, as Colonel Mullins says with some difficulty, there had been no return from it since Fusly 1277, when the breach was cut by Mr. Thornhill, then Collector.

* The average revenue derived from dalwa crop from Fusly 1275 to Fusly 1284, was Rs. 7,266.

4. It was replaced by Mr. Leman merely as a temporary measure, and to assist the ryots who had suffered much in that year by the overflow of the lake and the Budamair.

5. Colonel Mullins is quite correct in saying dalwa is not a crop to be encouraged, as it is only a second crop; in fact, it is only cultivated because the circumstances of the locality preclude any other cultivation. The land so cultivated is submerged when the lake is full. If the lake does not fill, no dalwa cultivation and no ordinary wet cultivation can be made, for the ryot cannot afford the cost of raising the water sufficiently. If the lake fills the waters do not subside sufficiently for cultivation till November or December, and then it is too late for any but this three months' dalwa wet cultivation. If it be drained so that the level of the lake-water is seldom above sea high water-level, then a large tract of land will be made capable of cultivation, and will, I have no doubt, be taken for dry crops until the channels designed to irrigate the adjacent lands are complete.

6. The method of dealing with the lake has been advocated by many Engineering and Revenue Officers, whose opinions have been recorded.

7. As the Board observe, there is much cholum land in the Davaracota Zemindary, for

which irrigation will never be taken, and the extent of land which is fit for no other than wet cultivation has been roughly estimated at 3,000 Acres.

8. To the question whether the wet assessment prevents the occasional cultivation of dry crops in the Divi Pargana, I have to reply in the negative, for the present rule is that when water fails the ryots who utilize their wet lands for dry cultivation are to be charged dry assessment only.

9. The chief reasons why the ryots do not avail themselves of this privilege are that the wet fields are of a stiff soil, difficult to plough unless the land is soaked with water, and being small it is not convenient to run the long furrow suitable for dry crops, and the ryots have a notion that wet fields used for dry crops will not give a good outturn wet to the cultivation of the succeeding year, and that such soil is not fit for, and will not produce, a good dry crop when the endeavor is made, and that it has not ever been customary here to raise a dry crop in wet lands.

10. There is another probable reason, which is that they cannot commence the dry cultivation till all chance of the tanks filling is over, *i. e.*, till after September or October; for if water came to the tank after all they would be charged water-tax in addition to the land assessment, and therefore there is only time for one late dry crop, and, as they are charged the full dry rate and are afraid of the crop not turning out well, they prefer to make sure of their claim to remission, and avoid the chance of loss by a crop that may not pay the assessment.

11. I think it might perhaps be worthwhile to lower the charge, and ask only two-thirds the dry rate. This might induce ryots to attempt to cultivate the ayacut with dry crops and for fodder in the event of a failure in the supply of water.

12. It would be a very good thing to encourage, and, as the present usual practice of leaving the whole ayacut waste had doubtless its origin in the charge of wet rates which was formerly made, and which rendered the cultivation of fodder impossible, it may be that as soon as it might come to be generally known that two-thirds of the dry rate only was charged in the event of there being no irrigation the old custom of leaving the fields waste might come to be abandoned.

This letter contains the replies of the Acting Collector of the Kistna District to the points referred to him for report in Board's Proceedings, dated 12th November 1874, No. 3,260.

2. 1*st.*—As to the treatment of the Colair Lake—

Proceedings of Government, dated 29th September 1874, No. 2,732, Public Works Department.

Board's Proceedings, No. 4,081, dated 2nd July 1864.

Paragraphs 36 to 40 of Colonel Mullins's memorandum of 7th May 1874 are devoted to the consideration of this subject, and he points out that it is desirable that it should be determined in what way this great basin should be treated. This question was fully discussed in 1864 and in subsequent years. There has been a very general consensus of opinion that the first requisite in dealing with this great sheet of water is to reduce the level of the water to the lowest possible point.

3. Colonel Mullins is clearly of the same opinion, and the Acting Collector fully supports it. The only argument against it is that a certain precarious hot-weather cultivation* will be lost thereby.

* Called Dalwa.

4. The Acting Collector shows that the average revenue from this is only 7,000 Rupees, and it is so uncertain and spasmodic in its nature, that no one will be seriously injured by its loss. The lands are not held on putta, and no compensation will be due to any one if it is abandoned.

5. The advantages to be gained by draining the lake are that a large area of land now submerged will be made available for cultivation or for pasture, and that the drainage of the surrounding lands will be greatly improved.

6. It is probable that there will not be sufficient water available from the Godavery and Kistna channels for some years to provide irrigation for all the land laid bare, but it is expected that much of it will grow dry crops; at all events, the best mode of disposing of it can be best determined when it is drained. Colonel Mullins proposes two alternative plans for draining—the one is to enlarge the opening and allow the water to run freely to the sea through the Upputér, in doing which it must be remembered that a road will be given for the flow of the tide into the lake, the bed of which is below high water-level.

7. The other plan is to extend the existing calingulah to a length of about 1,000 feet, and to provide it with self-acting sluices 4½ or 5 feet below the crown: by this means Colonel Mullins points out that the depth of water would be considerably lowered even during the rains, and that after the freshes had subsided it would have the effect of keeping the water at eighteen inches or two feet lower than if the tide were allowed to flow into it.

8. The Board very strongly recommend that the latter alternative be adopted: it will lay

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bare far more land for eventual cultivation, and, what is of much greater importance, it will have a far greater influence on the drainage of the surrounding tracts which are now often hopelessly flooded.

9. *2nd.*—As to irrigation of lands under the bank channel in Zemindaries—

In treating of the extension of the canal along the eastern bank of the Kistna, Colonel Mullins points out that its eventual object will be to supply irrigation to the island of Divi, but that in its course it will pass chiefly through Zemindary lands, and that the demand for water in them is so limited, that it will not be worthwhile to make provision for their irrigation.

10. A great deal of the land traversed by the canal is so valuable for the growth of cholum and other dry crops, that irrigation will probably never be demanded for it, but much land is suitable for irrigation, and the Acting Collector says that about 3,000 Acres are reported as unfit for anything but wet cultivation. The Board have no doubt that eventually water will be taken for all lands suited for irrigation, but it may be some years before the demand arises. They are of opinion that provision should be made accordingly in planning the main channel, but that no subsidiary works should be undertaken till they are actually called for.

3rd.—As to the cultivation of dry crops in wet lands in Divi—

Colonel Mullins having observed that all the wet lands in Divi on the occasion of his visit were left waste owing to a failure in the supply of water to their tanks, inquired if there was anything in the rules of assessment which deterred ryots from so cultivating them. The Board pointed out that under Standing Order No. 17 of 1873 ryots are only charged dry rates when cultivating dry crops in wet land, so that there was nothing in the rules to prevent them from doing so. The Acting Collector now adds that the wet fields are not generally suitable for any culture; that the preparation for wet crops unfits them for dry grains and *vice versâ*, and moreover, that it has never been customary to raise dry crops in wet land: he also says that ryots wait till the last in hopes of getting water for wet crops, and that then it is too late to fully utilize the land for dry culture, and he suggests that some good might be done by allowing a still lower rate of assessment for lands cultivated with dry crops. The Board do not consider that any good would be gained by a further reduction of assessment; if people were otherwise disposed to grow dry crops, they will not be deterred by the highest dry rate. There is much force in the reason given by the Acting Collector in paragraphs 9 and 10, and the Board would leave the ryots to do as they please in the matter. Mr. Newman has omitted to mention that they always cultivate dry crops in the beds of their tanks, which are very extensive, after the water has been drawn off, and that the fertility of the lands being great they invariably secure good returns.

Proceedings, dated 12th November 1874, No. 3,260.

Paragraphs 9, 10, and 11.

(A true Copy and Extract.)

(Signed) H. E. STOKES,
Acting Secretary.

Order thereon, 17th January 1876, No. 71.

Communicated to the Public Works Department in continuation of Proceedings, dated 30th November 1874, No. 1,464.

2. The Government accept the conclusions and recommendations of the Board, *i. e.*—

(1) That the Colair Lake should be drained to the lowest possible level by the second of the two alternative means suggested by the Chief Engineer for Irrigation, viz., the extension of the existing caliugulah;

(2) That in planning the main channel under the bank canal project, Eastern Delta, provision should be made for the irrigation of about 3,000 acres in its course through Zemindary tracts; no subsidiary works, however, being undertaken until they are actually called for; and

(3) That nothing is needed on the part of the Revenue Department to encourage the ryots to cultivate dry crops in the Divi Pargannah when the supply of water to their tanks fails.

3. On the first question, it has been shown conclusively, that the loss of an average annual revenue of Rs. 7,000 now obtained from the precarious dalwa or hot weather cultivation on the margins and islands of the lake, will be abundantly compensated by a large area now submerged becoming available for cultivation or for pasture. It may be some years before all the land laid bare is placed within the reach of the Godavery and Kistna channels; but dry crops, which will be grown in the mean time, will go far to make up for the present loss, and there will, above all, be the great advantage of ensuring free and unobstructed drainage for large and valuable delta tracts.

4. On the second question, it is to be observed that the chief object of the bank

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canal is, as pointed out by Lieutenant-Colonel Mullins, to benefit the island of Divi, in which it is expected that some 45,000 acres will be irrigated. Under the present uncertainty, therefore, as to what extent irrigation will be sought for the intervening Zemindary lands, the Board's suggestion seems to be the only eligible one.

5. On the third question referred for consideration in the Revenue Department as pointed out by the Board, the ryots are free to cultivate dry crops, paying only dry assessment. The fact is, the feasibility of a temporary change from wet to dry cultivation depends upon conditions irrespective of the Government demand.

(True Extract.)

(Signed) W. HUDLESTON,

Chief Secretary.

MISCELLANEOUS.

THE BEST METHOD OF LAYING OUT AND WORKING SALT-PANS.*

I HAVE the honor to inform you that, in accordance with Board's Proceedings, dated 17th October 1874, No. 3,021, after selecting sites for salt manufacture in Malabar and Canara, I proceeded to Ennore to lay out model salt-pans on a small scale for the information and guidance of the West Coast Salt Deputy Collectors. To enable these officers to contrast the French and improved native systems, I prepared a small modified native ullum on a plot of land close to where Mr. Cammiade was arranging his salt works on the French model under my instructions.

2. These two works were begun too late in the season—in April and May—to furnish satisfactory economic results, but they afforded reliable indications of a most encouraging kind, and many additions to our practical knowledge of salt manufacture were made during their construction and use. The special object which the Board had in view was also attained. The Salt Deputy Collectors of the West Coast, though coming after the close of the season, saw how salt is made on a large scale in Europe, and how in the native and improved native ullums.

3. It is my intention to embody in this report the practical information resulting from this and previous years' work, especially with a view to assist the Deputy Collectors or others who may lay out and work the extensive and important salt-pans which are to be opened for the supply of Malabar and Canara, or which may be opened, elsewhere, hereafter.

4. In setting out salt-pans, having ascertained that the soil is good, that it is capable of being thoroughly drained in wet weather, and that a permanent source of brine at least 2° Beaumé in density is at hand, the first thing to do is to cast about for a brine reservoir, if one can be had. It often happens that an arm of an estuary, an inlet or a silted basin, can be banked off and isolated so as to form a reservoir of strong brine. It will make an enormous difference in the produce of the salt-pans if this can be done early in the season. This year Mr. Cammiade succeeded, by enclosing a small branch of the Ennore estuary at a trifling cost, in raising his brine supply from 2° to 6° Beaumé in the course of three months. Brine at 6° Beaumé contains three times as much salt as at 2° Beaumé, and three times the amount can be manufactured from it in an equal time.

5. The next step is to protect the site from inundation by surrounding it with a sufficient embankment. It is impossible to state here exactly what amount of embankment will meet the various requirements of different localities. The object is to protect the works from the highest floods which may threaten them. In the south of France the *salins* I visited were protected beyond the level of the highest flood there recorded, and I would strongly recommend this precaution of a scientific and practical people for general adoption. The earth used in the formation of the embankment is usually taken in such a way as to excavate a canal surrounding the works, and this canal, which is very generally used for storing brine, is cut within the embankment, or rather the earth for the embankment is thrown up on its outer edge. It is most important to press forward this work, having regard to the short duration of the manufacturing season. It will be most rapidly completed if given out in short sections to different contractors, the contract specifying the date of completion. These works should always be carried out in consultation with an Engineer.

6. Having plotted out the embankments, &c., and set the contractors to work, next study the levels, for brine has to be conveyed from the condensers to the salt-beds and drained off from the latter, and unless advantage is taken of natural slopes, the necessary fall for the flow of brine must be provided for by artificial means. The levels can be accurately ascertained on a small scale, as in native ullums, by flooding the site, watching the flow of brine, and taking its depth at intervals; but as it is to be hoped that the native system of manufac-

* Report addressed to the Sub-Secretary, Board of Revenue, Madras, by Surgeon J. J. L. Ratton, M.D., dated 15th November 1875.

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ture will not obtain a footing in new sites, they should be accurately levelled by a competent Engineer.

7. Next mark out at the lowest level a portion of ground equal to one-fourth of the whole area for the salt crystallising beds. In districts having very hot and dry climates, such as South Tanjore, Madura, and Tinnevelly, the proportion of crystallising to condensing surface proper will have to be much larger. In Tinnevelly, for instance, the proportions given might be reversed with advantage, but on the West Coast that stated will be found the most suitable. Where, however, a condensing reservoir, as described at paragraph 4, or brine-pits are established, the condensing surface of the works will have to be in time reduced, and the crystallising area proportionately increased to carry off the accelerated produce of salt. Other circumstances modifying the relative areas of beds and condensers will be found treated of at paragraph 36.

8. It will sometimes happen that the lowest part of the site is the furthest from the road, rail, or river, &c., destined to carry the salt into circulation. In such a case it will become a question of expense whether to carry the road, canal, &c., as the case may be, to the lowest level, or to excavate a still lower level for the salt-beds adjacent to the traffic highway. Generally speaking, it will be found cheaper and more convenient to adopt the first alternative.

9. A site for the salt-platform or platforms must now be selected between the crystallising beds and traffic route, or somehow in convenient juxta-position to both, remembering that the removal of salt to the store-platforms is one of the greatest labors in salt manufacture, and a source of heavy expenditure exactly in proportion to the distance to be traversed. The requisite area for the salt-platforms may be found by calculating that the yield of salt will be three garce per acre of the whole salt work per crystallising month, and crystallisation begins about the end of the first month of the working season, the duration of which differs in different parts of the Presidency. The platform should be of such a height as to raise the salt itself above the highest floods.

10. Having roughly plotted out the area and position of the beds and platforms, the next point is to consider the number and position of the condensers. These must never be formed on any preconceived theoretical design, however nice, but must form themselves in following the natural undulations of the soil. The first condenser is placed at the highest elevation, and as the brine flows from thence to the salt-beds, the intervening area must be intersected with clay ridges or bunds in such a manner that the brine shall be made to flow over the whole space, and shall not, if possible, exceed three or four inches in depth any where. Slight irregularities of surface need not, as a rule, be attended to, as long as the average depth of the condensers does not exceed three inches, but small projecting hillocks should be thrown down, and all vegetation cleared away. In a large salt work the condensers should not be less than twelve in number, but it will be seen from the foregoing that they may be much more numerous, and with advantage.

11. The next step is to bring the brine from its source to the first condenser. Should the first condenser happen to be on the bank of the estuary or other brine source, nothing need be done except provide and arrange the necessary pumping machinery; but should it, as is more often the case, be a long way off, a canal or an aqueduct will be required to convey the brine to it. Whether to prefer a canal or an aqueduct for this purpose is again a question of expenditure depending on the levels. If the banks of the estuary are so low that but little cutting would be required to form a canal, a canal would be preferable; but if, on the other hand, they are so high that the formation of a canal would be a very expensive work, it would be cheaper to pump up the brine at once to a high level, and convey it in an aqueduct to the condenser. I prefer a canal with sluice-gates, where practicable, because the brine used is almost invariably taken from an estuary, in which, owing to rains, tides, &c., it fluctuates in density, so that at times it is well suited and at other times unsuited to salt manufacture. A canal provided with a sluice-gate would catch the best brine and store it up for use, and so render the salt works somewhat independent and self-supporting. But both methods of conveying brine may be combined, the canal going part of the way, and the pumping-engine being used at its termination to raise brine to an aqueduct conveying it to the condenser. Here also the services of an Engineer are required.

12. In all salt works of a size to manufacture salt well and economically, that is to say, of not less area than fifty acres, steam machinery should be used for pumping up the brine. As the average rate at which sea water evaporates to dryness on the west, as at most east coast stations, is one-third of an inch a day, the amount of brine to be furnished to the works daily ought to be found by multiplying the whole evaporating area, crystallising as well as condensing, by one-third of an inch. This, however, presupposes that there will be neither leakage, soakage, nor any other cause of waste, and as again one-third of an inch is the mean and not the invariable rate of evaporation, provision should be made for the highest rate, which is half an inch a day. At the half-inch rate of evaporation per diem, 1,808 cubic feet of brine per acre per diem will be required.

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The pumping machinery erected for the purpose of supplying this should be provided in duplicate, otherwise gear accidents, trifling in themselves, might arrest the whole process of manufacture and cause considerable loss. I am not able to recommend any particular form of pumping-engine. In the south of France, after various trials, the steam *tampon* has been finally adopted, but I suppose that this is a matter which would depend very much on the levels and on the amount of brine required, and which should be left in each case to the judgment of an Engineer on the spot.

13. Having planned matters so far, the data upon which to frame estimates are available. The capacity of the canal or aqueduct, as well as the form of pumping-engine, will depend chiefly on the acreage to be irrigated. The cost of embanking will have been already ascertained. The platform estimate should include a slight masonry frame to go three-fourths round the base of each salt heap. The cost of laying out and getting the site ready for salt manufacture will be about Rupees 100 per acre.* The canal sluice-gate should be in a masonry frame.

14. The work of bringing the brine to the place marked for the first condenser should now be begun, and where there is sufficient labor the salt-platforms should be taken in hand at the same time. The canal, like the embankment, will be most expeditiously completed if given out in small contracts. It is a good thing to stipulate with each contractor that a certain number of coolies shall be employed on the work each day under a penalty. As the line of the canal or aqueduct, as well as their precise form, will have been surveyed and settled by an Engineer, nothing more need be said about them, except that, as the canal usually cuts through moist strata and is flooded with subsoil brine, the pumping machinery should be provided in time to facilitate this work.

15. The earth for the platforms should be dug out in such a way as to form small tanks or pits—the deeper the better—into which the waste products of manufacture can be discharged. These tanks in the early part of the season form valuable sources of subsoil brine. They are also used after heavy showers to collect the surplus brine from the salt-beds.

16. The formation of the condensers cannot ordinarily be undertaken until brine is brought to the high level or first condenser, inasmuch as the ridges which form them have to be puddled with brine. The partitions between the different condensers are made by puddling up low mud banks, broad enough to walk upon, and high enough to maintain an average depth of three inches of brine in each. The exterior mud banks surrounding the whole system of condensers are made in a different way, and are designed to prevent leakage.

17. Completely encircling the salt works forming the outer wall of the condensers and salt-beds, a trench over a foot in width should be dug down until it reaches into the moist clay below the level of cracks in the soil. In this trench good stiff clay should be placed and puddled and moulded upwards, forming an impermeable wall surrounding the works, of the height required for the condensers. This is a practical expedient of the greatest importance in preventing leakage. In clay salt works the leakage is nearly always circumferential. Clay itself does not leak unless it is cracked. A section of yellow Ennore clay, containing when sun-dried six per cent of moisture and fire-dried 31·19 per cent of sand, half an inch in thickness, supported one inch of brine for several days, until it slowly evaporated in my room. There was no leakage, and I found that ochreous clay behaved in this respect quite as well as greasy-looking, black carbonaceous clay, containing only 7·5 per cent of sand.

18. The sides of the partition bunds, as well as of the marginal wall, should be sloped to an angle of 45°. This is important, and coolies will not attend to it unless they are closely looked after. They make the bunds vertical, or nearly so, and the consequence is they are gradually fretted away by the waves. The condensers should communicate one with the other at the most dependent part, and the inlet and outlet openings should be as far asunder as possible. The openings should be made in the first instance too small, and afterwards gradually enlarged to the size which will be found by experience to regulate properly the flow of brine. Vegetation should be encouraged as much as possible on the mural and condenser embankments.

19. Since rain-water is much lighter than evaporated brine, I thought that calingulas at the brine level in the salt-beds and finishing condensers would be of service in carrying it off during and after showers. Rain rests on the surface of the sea, which is comparatively of little density. From experiments made this year I find that calingulas do good where the brine to be protected is strong and deep, at least six inches in depth. Shallower strata of brine are on the contrary beaten up and carried off mechanically by the heavy rains of this country. Calingulas may be of use then on the deeper sides of finishing condensers and deeply-irrigated salt-beds. Mine were simply gaps cut in the clay embankments.

20. With the impermeable wall, before described, surrounding the works, the condenser floors need not be in any way protected from leakage. There will be at first great

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loss from soakage. Brine will sink down through cracks in the soil, through sand-drifts, &c., until it reaches the moist, impermeable clay beneath; it will then spread out until arrested by the encircling wall, and then there will be no further loss unless caused by crabs. Crabs will have to be carefully watched for, and the wall protected against their inroads.

21. Three kinds of crabs may be expected to attack the works. The first is (after *Cuvier*) a species of *Arcuata*, or running crab. It makes a tunnel about two inches in diameter from the subsoil brine level to the surface. It is seldom found further than fifty yards from the shore, and will take itself off if much interfered with. The second species is the *Gelasimus annulipes*, or common calling crab. It lives in the subsoil within a distance of twelve yards or so from the shore, and its burrow to the surface is about a quarter of an inch in diameter. It is easily killed, and will desert the place promptly when the brine reaches a density equal to 7° or 8° Beaumé. The third and worst variety of crab is a small *Arcuata*, having a quadrilateral dark blue or black carapax, less than an inch in long diameter. This crab is very numerously represented in some localities. It riddles the salt-bunds with burrows half an inch in diameter, which it re-opens as often as they are closed. It infests condensers in which the brine is not more than 8° Beaumé in density, and is very difficult to get rid of. It may be dislodged, however, if its hole is blocked up every day for a couple of months.

22. When the condensers are finished and filled, it will be time to commence making the salt-beds. Nothing is gained by beginning them earlier, as they require to be irrigated at once as soon as they are ready for work, otherwise they crack and spoil, and until the brine has stood in the condensers for some time and evaporated to the proper density, there is none wherewith to irrigate them. It injures the beds to fill them with weak brine. Weak brine and fresh water filter through the prepared clay-bed floors soften and unfit them for use. This is evidenced by the softening of the beds after a heavy shower of rain has diluted the brine in them. I proved it to be the case experimentally also by filtering equal portions of fresh water, sea water, and brine at 28° Beaumé through a stratum of mixed clay and sand. Fresh water and sea water took about the same time to percolate through; if any thing, the sea water soaked through the quickest. The brine at 28° Beaumé, specific gravity 1,238, took three times as long as the others. Although 23 per cent heavier, only one-third of it escaped in the time taken by water to pass completely through. This shows that brine loses in fluidity much more than it gains in weight. These experiments were made and remade on the same days in my own room, away from disturbing influences.

23. As the salt-beds are to occupy the lowest ground, their arrangement in rows, blocks, &c., will be controlled by the shape of that ground. A very convenient size for the beds is forty yards long by twenty yards broad. In cutting them out care should be taken that all the angles are right angles, otherwise the beds will be of unequal areas, and coolies will not attend to this. Pathways elevated six inches from the bed floors, three feet broad on top and four at the base, should surround and form, with the necessary channels, the boundary walls of the beds. Their sides will be, in this way, six inches high and sloped to an angle of 45°. These paths should be well and firmly made, and thickly strewn with sand. Less than an inch and a quarter of clay taken from the surface of each bed will form the paths which surround it. Where beds adjoin and the pathways are common to both, less than three-quarters of an inch from each will be required.

24. The feeding channel for the conveyance of saturated brine from the last condenser to the salt-beds must not be lost sight of when forming the latter. It will follow the slope of the ground from the highest to the lowest level. It is a common mistake to make this channel too small. It should be large enough when single to pour one inch of brine over the whole area of the salt-beds in a short space of time; but where, as will generally happen, it will be found practicable to make more than one feeding channel from the last condenser to the beds, each should be capable of irrigating the beds it is destined to supply within an hour at most.

25. The next and most important prelude to manufacture is the practical work of making the salt-beds. It may be set down as an axiom that, as salt has been hitherto scraped in this Presidency, good clean salt cannot be obtained from clay beds, unless the latter are frequently repaired at a very serious loss of time, money, and even salt. It takes about eighteen days to make the beds in the first instance. After four scrapings, that is to say in about twenty days, the surface of the bed becomes a perfect slough of mud and salt crystals, and it has to be remade. This takes about a week; and so on after every third or fourth scraping the bed has to be again remade, so that about one week in every month of the salt season is lost from this cause alone. In addition the bed has to be remade after heavy rains. This is not all. The third and fourth scrapings yield dirty salt, scraped from a partially-softened bed, and a good portion of the fourth scraping, I should say from experience quite 30 per cent, sinks into the mud and is lost. Besides, extra expenditure has to be incurred for extra labor to retramp the beds.

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26. Considering that artificially-made beds of permanent materials, notwithstanding their initial expense, would be cheaper in the long run than clay beds, I made some small experiments with such materials as I could collect at Ennore at a late period of the past season. The desideratum is a bed that will stand the wear and tear of being walked upon, scraped and flooded with fresh water and strong brine for a few years. Such a bed will always yield clean salt. It will yield all the salt in the brine with which it is irrigated. It will, weather permitting, always be at work, and it will cost nothing to remake or repair. How far my experiments may have advanced the solution of this problem may be judged from a consideration of my notes regarding them to be furnished further on in this report. To avoid encumbering this portion of my subject, I will merely say that I am not yet in a position to recommend the adoption on a large scale of any artificial material for salt-beds.

27. The process of making clay salt-beds is as follows:—1*st*, remove all vegetation and level the ground; 2*nd*, if the soil is very hard, dry and fissured, dig up about a foot in depth all over it and break up the clods; 3*rd*, let in as much brine as will reduce the floor of the bed to a depth of six inches, to the consistency of soft mud; 4*th*, tread and puddle it under foot until it is so dry that the foot ceases to make an impression on it; 5*th*, let it set and harden until it shows signs of cracking; 6*th*, irrigate it with sufficient brine to test the levels accurately and relevel it; 7*th*, puddle it under foot until it is again dry and firm; 8*th*, sand it with fine sand, and dimmice or roll it well; 9*th*, let it rest and harden in the sun, watering the surface from time to time to prevent cracks until cracking can no longer be avoided. The bed is then ready, and should be irrigated at once before cracks actually develope.

28. The foregoing process takes eighteen days more or less according to the weather. The natives of this coast make it a point invariably to dig up the surface of salt-beds which are being laid out for the first time, irrespective of the condition of the soil. This is not necessary where the soil is still soft and free from cracks, as I have satisfactorily established by experiments both on a large scale and in the laboratory, and as the practice is one involving considerable expense, it is well to know when to avoid it. A watering pot with a fine rose will be found very useful for watering the bed and preventing surface cracks in the last or hardening stage. Rolling the beds as a substitute for dimmicing was tried during the past season at Mr. Cammiade's works and found to fail. A very heavy roller was, however, used, about three times as heavy as that in use in the south of France. I believe myself, from what I saw of this experiment, that a broad, light, garden roller might be substituted for the dimmice in the eighth stage of bed-making with the greatest advantage. The beds during the eighth stage should be sanded with fine sand, just sufficiently to prevent the laborer's feet and the dimmice or the roller from sticking to the earth. From experiments made this year with sand, both large grained and small, it was found that the more sand was worked into the surface of the bed and the larger it was in grain, the quicker the bed disintegrated.

29. Having thus made the bed, it must be divided by small clay partitions, one down the centre and two across, into six equal and communicating compartments. The object of this is simply to brake wind ripples on the surface of the brine to obtain as much rest as possible for the process of crystal formation. It has been found practically impossible to protect the beds from wind. Mud walls and palmyra leaf, &c., barriers were tried both by Mr. Cammiade and myself, and found to do more harm than good. By using these clay breakwaters and very shallow irrigations of concentrated brine, I have, however, succeeded in obtaining even on the windiest days a sufficiently tranquil surface for the formation of good salt crystals. It is well, when the clay bed is directly irrigated, to peg down about a square yard of planking in front of the irrigation opening to prevent the bed from being cut up by the influx of brine.

30. I will suppose that the beds are finished, and that the brine in the last condenser verges on saturation; the question, what system of manufacture to adopt? now presses for decision. The native system, which consists in scraping up small quantities of salt at frequent intervals, is wholly unsuited in my opinion to clay works. It results in the manufacture of dirty salt, and even at that, there is, as I have shown, great loss of time, money, and salt. The French system, which is the reverse of the native and at the opposite pole of manufacturing systems, is equally unsuitable. It consists in allowing the salt to crystallise from a considerable depth of saturated brine continuously for a period of three months, when it is removed at one harvesting in blocks. Our climate, it is needless to say, does not lend itself to this system. Few people in this country would risk all or nothing on the chance of even one month without a tropical shower. At any rate, the hazard attending it puts it out of consideration.

31. I believe that somewhere between these two systems that which is best adapted to the climate and soil of this Presidency will be found. A most important indication is to obtain the salt with as little disturbance of its clay bed as possible. Keeping this in view, it must not be

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gathered too often; on the other hand, it must not be left too long, lest rains destroy it. My experience suggests, all things considered, a fortnight as the most suitable interval for salt scraping, but of course a great deal would depend upon the weather. Adopting then an increased interval from the French, in all things else we must follow the native track. Deep irrigations are not suited to our coasts. The violent and regular trade winds, and land and sea breezes, which blow throughout the salt season, churn up such irrigation in a way to frustrate proper crystallisation. Shallow irrigations, not deeper than one inch, on the other hand, preserve a tranquil surface in ordinary winds, partly because the fluidity of saturated brine is considerably diminished, and partly because the wind cannot get a grip on shallow strata of heavy brine, and excellent crystals are the result. These suggestions point to a modified accretion system, abbreviated from that of Metkanum, as being the best adapted to our circumstances.

32. Whether to lift the salt off its clay bed with trowels, to scrape it off with boards, or to provide a bed of sand on top of the clay for its special support, and to prevent disturbance of the clay? is a further question which results from the adoption of the system of manufacture sketched above. Ordinarily speaking, at the end of every fortnight there will be a salt cake about three-quarters of an inch in thickness to remove. Whether it is scraped up or lifted off it will cling to the clay, and both the surface of the bed and the purity of the salt will be impaired. An experiment that I made with sand during the past season was brought to a premature end by the rains, but I saw enough to gather hope from it and to recommend it for further trial. I made a salt-bed in the way described at paragraph 27 and let it harden. I then covered it with two inches of sand, and irrigated it until the sand was covered with half an inch of saturated brine. Excellent salt crystals were deposited from the brine on the surface of the sand, but before the bed could be irrigated a second time rain swamped it. I anticipate that salt cakes could be lifted off the sand without in the least disturbing the clay bed, and also that by gathering them in the wet, as is the present custom, the sand would wash off. In the adoption of these two expedients, harvesting seldom and lifting the salt carefully from an intermediate sand bed, I think we have the best available solution of the problem how to get clean salt uninterruptedly from earthworks.

33. A not unimportant advantage attending the use of sand as described is that the planking usually pinned down in front of the irrigation openings to prevent the prepared clay from being scoured into ruts by the inrush of brine may be altogether dispensed with, as the sand takes the force of the waters and is driven into grooves, which can be smoothed down as soon as the brine settles.

34. Now as to the proper conduct of manufacture, I believe myself that the best salt is formed in this country from thin sheets of brine never allowed to exceed half an inch in thickness and 27° Beaumé in density, renewed from time to time as may be required, according to the weather. Of course I mean half an inch reckoning from the surface of the sand, or of the salt cake when it forms. These very thin sheets of brine are scarcely at all affected by the wind, and by keeping their density low, crystallisation is not hurried. To maintain this arrangement the density of the fresh irrigation will very soon have to be reduced below 25° Beaumé, or else 25° + 27° for example will give at once 26°, causing salt to fall too rapidly, and 27° will be reached again too soon, necessitating frequent renewals of brine.

35. As the season advances the residual salts confined in the mother liquor will begin to exercise a potent influence in expediting the separation of sodic chloride from the brine, and this action will be early recognisable by the altered condition of crystallisation. Directly, therefore, the salt crystals begin to lose in regularity of size and shape, before small, hollow, and flaky forms actually appear, the fresh irrigations must be still further reduced in density, and the prepared brine maintained uniformly at 26° Beaumé, and afterwards even at 25° Beaumé if necessary. If this be attended to with care, I do not think it will be necessary to remove the bitterns at all during the ordinary four months crystallising season. It would be a great saving of power, of time, and of expense, if they could be retained. In the south of France, using irrigations about a foot deep, never allowed to pass 29° Beaumé, the mother liquors are retained during the whole process, that is, for about three months, until the salt cakes are ready to gather, when they are drained off. But if in the system sketched, notwithstanding the precautions taken, crystallisation begins to deteriorate manifestly, a sign which precedes actual magnesic adulteration, the beds must be filled to overflowing with the weakest brine procurable, which should be agitated for an hour or so, and then drained off as completely as possible. That this operation, if it be needed, will injuriously affect the beds, is almost certain.

36. Manufacturing in this way, the condensers will not be called upon to raise brine to 25° Beaumé during a great part of the season. They need not, therefore, be as large as they would otherwise have to be. Theoretically, the proportions of condensers to salt-beds to provide the latter continuously with sea water condensed 25° Beaumé should be 5 to 1; but because the condensers get nearly one month's

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start, and because the residual salt in the bitterns by forcing out salt in the beds supply the place of condensation, they need not, in the system sketched, be nearly so large. The proportion I have provided 3 to 1, I have practically found to be sufficient. This is a clear gain to the manufacturer. He has one-fourth of his ground turning out salt instead of one-sixth. Scraping salt as the natives do, a condensing proportion of 3 to 1 is likewise enough; but only because the beds soften and are thrown out of work, there is no gain in this; it involves a real loss.

(To be continued.)

COAL IN INDIA.

VIEWED as a coal producing country, the British territories in India cannot be considered as either largely or widely supplied with this most essential motive power. Extensive fields do occur but they are almost entirely concentrated in one (a double) band of coal-yielding deposits which, with large apparent interruptions, extend more than half across India, from near Calcutta towards Bombay. For the present, we shall confine our remarks to

Coal in Bengal.

Patches of coal or lignite, have been found in several places along the lower ranges of the Himalayan mountains. At the foot of the Darjeeling Hills, near the point where the Teesta river leaves the hills, and up the channel of the Sivok, a tributary of the Teesta, similar patches of lignite have been found, and have given rise, to the hope of the discovery of an important coal-field there. Dr. Oldham in his report on the "Coal resources and production of India" states that these patches of lignite have all proved to be either detached fossilized stems of trees, imbedded in the sand-stone, or nests of lignite of no extent. He found evidences of coal-bearing rocks occurring near to Punkabaree also at the foot of the Darjeeling Hills, but their limits had not at that time been traced, and no coal was known to occur there. After a visit to Assam in 1864-65, Mr. Medlicott reported most favourably of the value and extent of the coal fields in that Province. To the north of the river Brahmapootra, no coal worth working was found. To the south, in Upper Assam, the principal localities were found to be the neighbourhood of Jeypore, in the Debrooghur District and the vicinity of Makoom. The chief places are the Teerap, where a minimum thickness of five feet of bright clean coal was seen; Naurdrik, a tributary of the Deehing, where, within two hundred feet three thick beds of good sound coal was found, one eight feet thick; and Jeypore where a seam of seventeen feet thick occurs, of which ten feet is good bright coal. Several other seams were also found which have never been touched. The inaccessible nature of the country, and the want of a trustworthy map rendered it impracticable then to obtain even an approximate idea of the area over which the beds range, and, consequently of the fuel available. Dr. Oldham, however, had no hesitation in saying that the fields would be very large and valuable. The assays of the Assam coal showed a proportion of ash not exceeding two or five per cent.

The existence of good coal in the Khasi or Khasia Hills, lying to the north of Sylhet, and between the valley of Assam on the north and the plains of Sylhet and Cachar on the south, was known so long since as 1815, when specimens of it, forwarded by Mr. Stark were tested at the Government gun-foundry at Cossipore, near Calcutta, and found to be good. Spasmodic efforts were made in subsequent years to work these beds, but the difficulty of bringing the coal to market, rendered every attempt abortive. This difficulty arises from the fact that the coal beds are at an elevation of four thousand feet above the plain, from which the hills rise with an abrupt scarp; preventing transport within any moderate outlay. The only means of conveying the coal from the mines to the water carriage below, is by actual porterage on coolies backs; a mode of transport not only very expensive but necessarily very limited. The coal is of excellent quality, and is specially well adapted for gas works, steamers, locomotives, &c. The coal is remarkably free from iron pyrites (sulphur). The quantity available in the Khasi Hills is estimated at from three to six millions of tons. At the western extremity of the same range, where the country of the Garos or Garrows overhangs the Brahmapootra, just below its great curve to the south, coal was stated to occur in more places than one, and although the general character of the rocks there, is known to be similar, and of the same geological age as those occurring more to the east, a search by Mr. Dodgson, who was in charge of a factory in the vicinity, failed to find any coal.

In Cachar, the specimens tested were found to contain fragments of fossilized stems alluded to above. Like the coal from many other of these nests or pockets, much of it proved bright and jetty and likely to yield fair results on assay. But no true beds of coal were found in the district. Chittagong had not undergone a geological survey, nothing was therefore known of the occurrence of coal there. The specimens tested did not lead Mr. Oldham to infer that any regular or continuous deposit would be found. Along the western side of the detached group of low hills, which stretch from near Soory the principal town of the Beerbhoom district, northwards to near the Ganges, and which are generally known as the

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Rajmahal Hills, coal deposits occur in numerous places. These localities are thus grouped. To the south of the basin of the Brahmini, four or five seams are known varying in thickness from three to twelve feet. In former years, fair coal was obtained from some of these beds. During the construction of the East Indian Railway there was a considerable demand on these works; but since the opening of that line to Raneegunge, where larger and better fields of coal exist, the Rajmahal Hills were abandoned. In the valley of the Bansloi stream several valuable beds of coal are found; and in the Goromanie valley also, and towards the north-western end of the hill range near Boorah beds of coal occur, from whence large quantities were obtained for the railway works. Here also as in the Brahmini valley the working of the coal beds ceased on the completion of the railway.

The well-known fields at Raneegunge are distant one hundred and twenty to one hundred and sixty miles, north-west from Calcutta. They extend from a few miles to the east of the village of Raneegunge, to some miles west of the Barakur; the greatest length being nearly east and west, about thirty miles, and the greatest breadth, almost due north and south, about eighteen miles. The area thus included by the coal-bearing rocks is about five hundred square miles. The fields consist of a series of beds divisible into three groups, which have a general dip from the northern boundary to the south, at angles varying from 5° to 20°. Along the southern boundary, the beds are turned up and cut off by a great fault. The total thickness exhibited by the series of rocks is more than 8,000 feet, and in this series the workable seams of coal are from 100 to 120 feet thick. Towards the centre of the field, and forming the hills of Beharinath, Panchet, &c., there rests unconformably on the coal rocks, a series of beds of a more recent geologic age and not containing coal. It is believed that these entirely conceal the coal-rocks which are under them, and form a thickness of non-productive beds through which Dr. Oldham considers it would be impracticable profitably to work the coal at present. To this series the name of the Panchet rocks has been applied. It is said that they contain some very interesting reptilian remains, which are probably of fresh-water origin, and of the general geological age of the Triassic or Khatic rocks of Europe. The Panchet rocks are supposed to cover one-fith of the entire area of the field, leaving approximately four hundred square miles over which the coal rocks are seen. The quantity of coal in this field is estimated at 18½ million tons from which after making the necessary deduction for waste, loss, small coal, &c., to the extent of one-fourth the total quantity is estimated at about 14 millions of tons. The coal of this field, like most Indian coals, is a non-caking bituminous coal, composed of distinct laminœ of a bright jetty coal, and of a dull more earthy rock. The average yield of ash is 14 to 15 per cent within limits of from 8 to 25 per cent.

The small but valuable coal-field of Kurhurbali, is situated to the north of the river Barakur, about twenty miles north north-west of the prominent hill of Parisnauth on the Grand Trunk road near Topchauchy, and about eighty miles south of the Luckiserai station of the East Indian Railway. Its greatest length does not exceed 6¼ miles, and its breadth is nowhere more than 2¾. The area of the coal-yielding rocks scarcely exceeds 10 square miles. In this field there are said to be several beds of good coal of considerable thickness from eight to fourteen feet, well placed for economical working. Much of this coal is also of better quality than the ordinary Indian coals and therefore more valuable. This superior quality has been established not only by assay, but by practical trials, extending over several months, on the East Indian Railway. Before the opening of the East Indian Railway this field was worked with great advantage notwithstanding the necessity of its transport over bad roads for a distance of about eighty miles. But since then it has been unable to compete with the rail-borne coal of Raneegunge, and the working of the field ceased in 1863. It was thought the works of the chord line would revive these works, although the nearest point of the line would be some twenty-five miles from the coal-beds, but it would appear that this hope was not realized. The Kurhurbali coal-field has been worked to too limited an extent, to admit of a decided opinion as to the equivalence or continuity of several of the beds. It is considered that there is an amount of coal equivalent to a thickness of nine yards over the field. From the total area of ten square miles Dr. Oldham thinks that one-fifth must be deducted, over which the overlying rocks are too thick to allow the present profitable working of the coal leaving an area of eight square miles. We have then 8 by 1760^2 by 9·223 million of tons and allowing one-fourth for loss, waste, &c., there are 168 millions of tons of coal available in this field. In the trial referred to, extending over three months, the superiority in the ratio was observed to be 113 : 100, thereon it is assumed that if one-half the quantity be the better quality; the 168 million of tons would represent a working power, equal to that of 190 millions of ordinary Raneegunge coal.

The extensive, though not very rich, coal-field of Jherria, lies along the valley of the Damoodah river from a point about ten miles to the west of the most westerly of the Raneegunge coal-fields. Its greatest length is twenty-one miles and its greatest breadth about nine miles. The total area is assumed to be two hundred square miles. In geological

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structure it is like the Raneegunge field, consisting of a series divisible into three groups which have a general continuous dip from north to south where they are cut off by a great fault. There is an absence of any indications of the overlying Panchet series, (for further particulars see Memorandum Geological Survey of India, Vol. V). The amount of coal in this field is roughly estimated at 465 million tons.

About a mile to the west of the Jherria field, is a long narrow band of coal-bearing rocks which runs along the valley of the Damoodah and the Bokaro (one of the affluents of the Damoodah). Its extreme length from east to west is about forty miles, and its greatest breadth north to south is not more than seven and half miles. This field is known as the Bokaro coal-field. Its total area is estimated at two-hundred and twenty square miles. In the centre of the field rises the massive hill of Tugoo covered entirely by the overlying series of the Panchet rocks. This mass of rocks covers an area of about 24 square miles, so that the available area of the field may be taken at 190 square miles. Much of the coal found here is of an inferior quality. It has been worked to some extent, and the coal has been carted to Hazareebagh and Gya, for the purposes chiefly of brick and lime burning. The quantity of fair coal available is computed to be 1,500 millions of tons. Owing to the difficulties of access to this field, it is not expected to prove more than a resource for local supplies.

The Ramgurh coal-field occupies a triangular space along the valley of the Damoodah. It extends eastward from the old fort and town of Ramgurh, where its breadth in a north and south direction is not more than a few hundred yards, for about twelve miles. At the eastern end the breadth increases to sixty miles. Its total area is taken to be thirty square miles. The field is of the same general type as those in Bengal, a series of beds dipping generally to the south and cut off there by faults, which bring them into contact with the gneissose rocks in the vicinity. The coal found is of an inferior quality generally and the total available quantity is taken to be about two to three million tons.

The Karunpora coal-field is of large extent covering a surface of at least 450 square miles, and is next in size to that of the Raneegunge.

It was first touched upon by Mr. Williams in 1848, but only a very small part of its area was examined by him. This extensive field is believed to be very poor in coal, and what does occur is for the most part of inferior quality. The knowledge possessed of it is however very limited at present. The coal found near Ectkoree to the north-west of Hazareebagh is of a poor quality, but serviceable for the purposes of brick-burning, &c. The Palawar coal-fields are between the upper waters of the Damoodah and the Koel; the principal one of which occurs along the valley of the Damoodah and its tributaries. The other fields lie along the Koel and the Soane. The Palamow coal-fields near the village of Rajhera were worked for years by the Bengal Coal Company, but were abandoned probably because they were unable to compete successfully with the rail-borne coal of Raneegunge. However on the opening of the Soane Canal it is believed the great obstacle to its success, that is the means of cheap transport will have been removed, and there appears to be good reason for supposing that the working of these fields will be resumed. No estimate of the quantity of coal to be found has yet been formed. Near the village of Singpur, the colliery of Kotala situated close to the limits of the British territory adjoining the Rewah State has for years been known and has yielded a fair amount of good quality. The quantity raised has been limited owing to the difficulties of transport to market. A cursory examination of the country was made about the year 1866, when coal of a very fair quality was found in eight or nine different localities, extending from Kotah on the east to Beryli on the south-west, and spreading over an area of forty miles in length from east to west and twenty in breadth from north to south. No estimate of the available quantity of coal has as yet been arrived at. A large area extending along the Upper Soane, the Mahanuddy and thence down to Sohagpoor and the vicinity of Ummerkuntuk has also been visited in the same cursory way. But the prospects of any large amount of coal being available in this district were considered to be not very encouraging. The Hutsoo is an affluent of the Mahanuddy. Near the village of Koorba some fifty miles from the Mahanuddy coal was noticed in the bed of the Hutsoo so long since as 1840, and more recently (1863) Captains Burton and Forsyth visited the place. Coal occurs in the Husdoo or Hutsoo near Koorba in the Beeja Kurra twenty-five miles north-east of Koorba, and in the Tabed a few miles further on in the same direction. It is supposed to extend two hundred yards along the bed of the former and about a mile in the latter. Coal was also found in the Chornai stream, a tributary of the Hutsoo. The probable amount of the coal available has not yet been ascertained.

The Talchier coal-fields in the upper valley of the Mahanuddy naturally connect themselves with those nearer to the town of Cuttack in the lower reaches of the same river and its distributaries. Of these, that near Talchier has been examined in detail, an account of which will be entered upon in our next notice. Coal is said to occur in places near to Sumbulpur between the Hutsoo and Talchier fields, but no particulars are forthcoming.—*The Indian Agriculturist,* Vol. I, p. 66.

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